

THE IMPACT OF COGNITIVE RESTRUCTURING AND SELF-COMPASSION
STRATEGIES ON NEGATIVE BODY IMAGE AMONG WOMEN WITH HIGHER BODY
WEIGHT: AN EXPERIMENTAL INVESTIGATION

by

Lauren Alysha David

Master of Arts in Psychology, Ryerson University, 2014

Bachelor of Arts Honours in Psychology, Queen's University, 2012

A dissertation presented to Ryerson University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in the program of Psychology

Toronto, Ontario, Canada, 2018

© Lauren Alysha David, 2018

AUTHOR'S DECLARATION FOR SUBMISSION OF A DISSERTATION

I hereby declare that I am the sole author of this dissertation. This is a true copy of the dissertation, including any required final revisions, as accepted by my examiners.

I authorize Ryerson University to lend this dissertation to other institutions or individuals for the purpose of scholarly research.

I further authorize Ryerson University to reproduce this dissertation by photocopying or by other means, in total or in part, at the request of other institutions or individuals for the purpose of scholarly research.

I understand that my dissertation may be made electronically available to the public.

The Impact of Cognitive Restructuring and Self-Compassion Strategies on Negative Body Image
among Women with Higher Body Weight: An Experimental Investigation

Doctor of Philosophy, 2018

Lauren Alysha David

Psychology, Ryerson University

Abstract

Individuals with higher body weight are at a greater risk of having negative body image (Friedman & Brownell, 1995). Yet current body image interventions, such as Cognitive Behavioural Therapy (CBT), are largely tested with individuals with normal weight or individuals with eating disorders. Furthermore, cognitive restructuring, one of the key components of CBT for body image (Alleva et al., 2015), relies on the assumption that negative cognitions or appraisals regarding the body are unbalanced or distorted in some way. However, people with higher body weight are 50% more likely to experience major discrimination based on their weight status and thus may possess some “evidence” from lived experience of weight bias that would lend support to their negative body-related thoughts (Puhl & Brownell, 2001; 2006). The use of compassion-focused approaches might be particularly helpful in overcoming these obstacles. Self-compassion refers to the capacity for mindfully reflecting on one’s own perceived flaws, mistakes, or wrongdoings with kindness and with an appreciation for the inherent imperfection in everyone (Neff, 2013). The present study tested the impact of various thinking strategies for managing negative body image in women with higher body weight after getting on the scale, a commonly distressing body image trigger (Ogden & Evans, 1996). Participants ($N = 79$) were recruited from the community and screened for moderate body

dissatisfaction. They were randomly assigned to receive a single training session in cognitive restructuring (CR), self-compassion (SC), or distraction (Control) strategies after being weighed. Participants in all three of the groups reported improvements in body dissatisfaction and negative affect immediately following the training. Relative to those in the Control group, those participants who received training in CR or SC strategies reported greater improvements in body image, body image flexibility, self-compassion, and cognitive distortions one week after the training. These findings suggest that CR and SC strategies may be helpful in improving the distress associated with being weighed among women with higher body weight. The results may have broader implications for the development of psychosocial interventions focused on improving body image among these individuals.

Acknowledgments

I wish to express my sincerest gratitude to my research supervisor, Dr. Stephanie Cassin. I have benefitted immeasurably from six years of your mentorship and unwavering support. I'm so fortunate to have been afforded the opportunity to learn from such a remarkable clinician, researcher, and person. I'm so grateful to Dr. Becky Choma for acting on my supervisory committee. As a result of your expertise, my work now reflects a greater understanding of how body image plays into a larger dialogue on objectification and social justice. Many thanks to Dr. Shelly Russell-Mayhew, Dr. Kristen Vickers, and Dr. Janet Yamada for serving on my examination committee. Thank you to Drs. Michele Laliberte, Traci McFarlane, and Heather Wheeler, for instilling in me a passion to pursue this line of research. A special thank-you to Danielle MacDonald for being an incredible confidante and teacher throughout my PhD. I'm beyond thankful for my HEAL family (past and present), particularly Aliza Friedman and Molly Atwood, for the comedic relief and endless support that made my graduate career so much more meaningful (and manageable!). To my cohort, it has been a privilege to grow alongside such exceptional budding psychologists. Thank you to the Canadian Institutes for Health Research for affording me the opportunity to study what I love. I want to acknowledge Dr. Kristin Neff, for she pioneered the incredible work in self-compassion that compelled me to conduct this study.

I'm forever indebted to my family and friends for tireless support of my "never-ending" graduate career. To my loving family, Michela, Graham, Natalie, and Marie, thank you for being my biggest fans since day one – all of my accomplishments are dedicated to you. To Justin, thanks for maintaining my sanity during a year of residency and dissertation writing. Finally, I want to recognize the women in my study for sharing your struggles and for allowing yourselves to be vulnerable with me. The resilience you all demonstrate inspires me every day.

Table of Contents

Author’s Declaration.....	ii
Abstract.....	iii
List of Tables.....	xi
List of Figures	xii
List of Appendices	xiii
A Note about Language.....	1
Overview	2
Literature Review.....	4
Understanding Negative Body Image	4
Negative Body Image	5
Negative Body Image and Obesity	7
Theories of Negative Body Image and Obesity	8
Consequences of Negative Body Image in Individuals with Higher Body Weight	11
Approaches for Improving Body Image.....	15
Weight Reduction	15
Cognitive Behavioural Therapy for Body Image	18
Efficacy of Cognitive Behavioural Therapy for Body Image	20
Efficacy of CBT for Body Image in Individuals with Higher Body Weight.....	25
Limitations of CBT for Body Image in Individuals with Higher Body Weight.....	27
Compassion-Based Treatments.....	28
Efficacy of Self-Compassion Training.....	31
Self-Compassion for Negative Body Image	32

Impact of Self-Compassion Training on Negative Body Image	35
Dispositional Strategies for Coping with Negative Body Image	38
Emotion-Oriented Coping for Body Image	39
Avoidant Coping for Body Image	40
Comparing Self-Compassion and Cognitive Restructuring to Dispositional Coping Strategies	40
Study Rationale and Aims	43
Research Questions and Hypotheses	46
Hypothesis 1a.....	46
Hypothesis 1b.....	46
Hypothesis 2.....	46
Hypotheses 3a) and 3b	47
Hypothesis 3c.....	47
Hypothesis 3d) and e	47
Methods	47
Participants	48
Measures.....	49
Mini International Neuropsychiatric Interview (M.I.N.I.)	51
Visual Analogue Scale of Body Satisfaction and Dissatisfaction (VAS).....	51
Positive and Negative Affect Scale - State Version (PANAS-S).....	51
Body Shape Questionnaire-16 (BSQ-16).....	52
Objectified Body Consciousness Scale – Surveillance Scale (OBCS-SS)	53
Assessment of Body Image Cognitive Distortions (ABCD)	53

Body Image Acceptance and Action Questionnaire (BI-AAQ)	54
Self-Compassion Scale (SCS)	54
Fears of Compassion Scale – Self-Compassion Subscale (FCS)	55
State Self-Esteem Scale (SSES)	55
Depression Anxiety Stress Scales, 21 item version (DASS-21).....	56
Demographic variables	56
Evaluation of Strategy	56
Procedure.....	56
Phone Screen.....	57
Baseline Assessment	57
Randomization	58
Study Visit and Post-Training Assessment.....	58
Follow-up Assessment	59
Study Completion	60
Strategy Training Groups	60
Cognitive-Restructuring	61
Self-Compassion	62
Distraction (Control)	64
Results.....	64
Randomization and Attrition.....	64
Participant Characteristics	69
Body Dissatisfaction Induction.....	69
Preliminary Analyses.....	70

Body Mass Index	71
Impact of Strategies from Pre- to Post-Training.....	71
Hypothesis 1a: State Positive and Negative Affect	74
Hypothesis 1b: Body Satisfaction/Dissatisfaction	75
Impact of Strategies on Body Image from Baseline to Follow-Up	76
Hypothesis 2: Negative Body Image.....	77
Impact of Strategies on Related Psychological Variables from Baseline to Follow-Up.....	79
Hypothesis 3a: Self-Compassion	81
Self-Compassion Subscales	83
Hypothesis 3b: Body Image Flexibility	85
Hypothesis 3c: Body-Image Cognitive Distortions.....	86
Hypothesis 3d: Body Surveillance	87
Hypothesis 3e: State Self-Esteem.....	88
Evaluation of Strategies at Follow-Up	89
Discussion.....	90
Impact of Strategies on Affect at Post-Training	90
Impact of Strategies on Body Image at Post-Training and 1-Week Follow-Up.....	93
Impact of Strategies on Other Psychological Outcomes at 1-Week Follow-Up	99
Self-Compassion	100
Body Image Flexibility.....	101
Body-Image Cognitive Distortions.....	103
Objectified Body Consciousness and Surveillance	105
Efficacy of Strategies on Self-Esteem vs Self-Compassion	106

Strategy Feedback.....	108
Interpretations of the Current Findings	109
Perspectives on the Current Findings from the Literature on Emotion Regulation	112
Limitations	114
Conclusions and Future Research.....	118
Appendices	128
References	178
Glossary of Abbreviations.....	204

List of Tables

Table 1. Study Measures and Administration Times.....	50
Table 2. Comparison of Groups on Demographic and Clinical Variables at Baseline	68
Table 3. Changes to Body Image and Affect Immediately Following the Training Session.....	73
Table 4. Changes to Global Body Image One Week Following the Training Session	76
Table 5. Changes to Related Variables One Week Following the Training Session.....	80
Table 6. Changes to Self-Compassion Subscales One Week Following the Training Session	83
Table 7. Evaluation Ratings of the Experimental Strategies.....	89

List of Figures

Figure 1. Summary of Participant Flow.....	65
Figure 2. Group X Time Interaction on Negative State Affect at Post-Training.....	74
Figure 3. Group X Time Interaction on Global Body Image at Follow-Up	788
Figure 4. Group X Time Interaction on Self-Compassion Scores at Follow-Up.....	82
Figure 5. Group X Time Interaction on Body-Image Cognitive Distortions at Follow-Up.....	86

List of Appendices

Appendix A. Visual Analogue Scale for Body Satisfaction and Dissatisfaction	128
Appendix B. Positive and Negative Affect Scale - State Version	129
Appendix C. Body Shape Questionnaire - 16 Item Version	130
Appendix D. Objectified Body Consciousness Scale – Surveillance Scale.....	132
Appendix E. Body Image Acceptance and Action Questionnaire	133
Appendix F. Self-Compassion Scale	134
Appendix G. Fears of Compassion Scale - Self-Compassion Subscale	136
Appendix H. State Self-Esteem Scale	137
Appendix I. Depression Anxiety Stress Scale - 21 Item Version	138
Appendix J. Evaluation of Strategy	139
Appendix K. Telephone Screening Script	140
Appendix L. Consent Form	145
Appendix M. Cognitive Restructuring Strategy Script and Worksheets.....	150
Appendix N. Self-Compassion Strategy Script and Worksheets	164
Appendix O. Control Condition Script and Worksheets	175

A Note about Language

To date, there is no established consensus regarding the most appropriate terminology to use when describing weight status in the literature. However, strides have been made toward identifying the most respectful and accurate language for scientifically communicating on this topic (as reviewed by Nutter et al., 2016). For example, the Obesity Society advocates for the use of “people-first” language, whereby an individual would be described as “having”, “with”, or “affected by” obesity as opposed to “an obese person” (The Obesity Society, 2013). A research study found that patients preferred the term “weight” when discussing excess weight in primary care settings (Volger et al., 2012). Participants also rated the terms “Body Mass Index” (BMI), “weight problem” or “excess weight” as more favourable than “fatness”, “excess fat”, “large size”, “heaviness” and “obesity”. In particular, “fatness” was rated as significantly more undesirable than any other label (Volger et al., 2012). Despite “fat” being a less preferred term by patients, activists and researchers aligned with a health-centric perspective may use this term in order to move away from shame and stigma that may typically be associated with the word (Colls & Evans, 2010; Cooper, 2010).

This dissertation utilizes “people-first” language when describing individuals with higher body weight as per the Obesity Society’s position statement (2013). Although the term “obesity” is not preferred when describing higher body weight, the terms “overweight”, “obese”, and “BMI” continue to permeate the medical literature on obesity and are congruent with the *Canadian Guidelines for Body Weight Classification in Adults*. Accordingly, the terms “normal weight”, “overweight”, and “obese” will be used throughout this dissertation solely to describe the participant sample in studies where BMI classification cut-offs were specified. “Normal” weight refers to a BMI between 18.5 and 24.9 kg/m², “overweight” refers to a BMI between 25.0

and 29.9 kg/m², and “obese” refers to a BMI greater than or equal to 30 kg/m² (Health Canada, 2003). Similarly, the term “individuals with higher body weight” will also be used throughout this dissertation to refer to individuals with a BMI in the overweight or obese range. It is important to underscore that the terms “normal weight”, “overweight”, “obese”, and “higher body weight” are used in this dissertation solely to describe participants’ weight status, not their medical health. The relationship between BMI and health outcomes is not linear and BMI does not account for numerous key factors that impact health, such as age, gender, and physical activity level (e.g., Lukaski, 2014).

Overview

The present study is an experimental examination of two therapeutic strategies for addressing negative body image in adult females with higher body weight. Cognitive Behavioural Therapy (CBT) is the approach with the most empirical support for treating body dissatisfaction in non-clinical and eating disordered samples (Cash & Hrabosky, 2004; Cash & Strachan, 2002; Rosen, 1996). CBT has also shown to be efficacious for improving body image in individuals with higher body weight; however, this finding was only demonstrated in one clinical trial that took place over 20 years ago and the women who participated in the trial were not screened for body image concerns (Rosen, Orosan, & Reiter, 1995). A systematic review and a meta-analysis of body image treatments have both identified cognitive restructuring as a common component amongst the interventions that have demonstrated efficacy for improving body image (Alleva et al., 2015; Jarry & Berardi, 2004). However, this strategy relies on challenging “distorted” thinking patterns with objective evidence (Beck, 2011), and thus is theoretically problematic for use with individuals who are at a higher body weight and who may have legitimate experience with weight-based stigma (Puhl & Brownell, 2001; 2006). Further

developments toward effective structural approaches for addressing weight-based stigma are undoubtedly warranted in order to reduce instances of stigma based on weight status (Nutter et al., 2016). However, strategies that seek to intervene on an intrapersonal level should be developed with a particular sensitivity to the reality of weight-based stigma in Western societies as to not invalidate individuals' lived experiences. One way to accomplish this is to examine strategies that promote a cognitive shift in negative body image thoughts without needing to directly challenge them with objective evidence, as these may be more helpful means of promoting improvements in body dissatisfaction among individuals with higher body weight.

Trait self-compassion is reliably associated with fewer body image concerns and higher body image satisfaction and appreciation, along with other indices of psychological well-being (Mosewich et al., 2011; Neff, 2003; Wasylikiw, MacKinnon, & MacLellan, 2012). There is a burgeoning literature examining the potential for training in self-compassion to improve the relationship people have with their bodies. An experimental study has found that inducing self-compassion can reduce body dissatisfaction in individuals with normal weight (Albertson et al., 2014). The current study tests the impact of a single session of training in cognitive restructuring and in self-compassion strategies on negative body image in women with a BMI exceeding 25 kg/m² and who also report significant body dissatisfaction. The cognitive restructuring and self-compassion strategies will be examined against the effect of distraction, which is one of the most common ways that people naturally cope with body dissatisfaction (Cash, Santos, & Williams, 2005; Koff & Sangani, 1997). Participants are weighed by the experimenter during the lab visit, and then are randomly assigned to receive training in one of the three strategies. The main outcomes of interest include changes to body image, as well as shifts in the emotions, cognitive distortions, cognitive flexibility, and body image surveillance associated with body image.

Assessments are conducted immediately after the training session, as well as after practicing the strategy for one week.

Literature Review

Understanding Negative Body Image

In his seminal work, *The Image and Appearance of the Human Body*, Schilder (1935) proposed that people hold a perception of their physical selves and that this image of the body evokes a psychological impact. He also suggested that this “body image” is shaped by factors, such as social interactions, which may distort or impede its development. Schilder’s inclusion of psychological dimensions to the study of body image provided a foundation upon which future researchers could investigate influences on body image and the impact of body image on the self-concept. Over time, the concept of body image has become increasingly multifaceted in order to capture the complex psychological experience of the physical self and its functioning (Cash & Smolak, 2012). At present, there are two components of body image: 1) the *perceptual* component is the mental representation of the body, and involves the accuracy of body weight, size, or shape estimation, and 2) the *attitudinal* component is comprised of global satisfaction, as well as affective, cognitive, and behavioural components. Global satisfaction refers to overall body satisfaction/dissatisfaction regarding body weight or shape or particular body areas. The *affective* component consists of emotions related to physical appearance, such as shame, anxiety, or sadness. The *cognitive* component includes beliefs, thoughts, and appraisals related to the evaluation of the body and to the importance of its appearance (e.g., on self-worth). The *behavioural* component includes actions performed or not performed as a result of the subjective cognitive and affective responses to the body, such as body checking (e.g., frequent weighing and looking in reflective surfaces), and avoidance of body image triggers (e.g., avoidance of

scales or reflective surfaces) (Cash & Smolak, 2012). In line with Schilder's theory, research has shown that body image is susceptible to the influence of internal (e.g., dichotomous thinking patterns, distorted perceptions) and external (e.g., exposure to thin idealism in the mass media) biopsychosocial factors, many of which are unrelated to the actual appearance of the body, and that negative body image can occur and persist when a disturbance to the psychological experience of the body develops as a result of these influences.

Negative Body Image

Negative body image broadly refers to a pattern of perceiving one's body in a way that produces distress. Negative body image, although not a formal psychiatric condition or diagnosis, is typically associated with overestimating the overall size of the body or a particular body part, experiencing negative, unrealistic, and overvalued thoughts about the body's weight or shape, and/or excessive monitoring of body size and avoidance of distressing situations related to body exposure (Cash & Smolak, 2012). It is important to note that inconsistencies exist in the literature regarding the terminology around body image. It appears as though the majority of the research in this area use the term "negative body image" synonymously with "poor body image", "body image disturbance", "body image concerns", and "body image dissatisfaction"; however, some expressions have been used to denote more specific components of negative body image. For example, body dissatisfaction has been used to refer to a disruption to the attitudinal component of body image, without capturing the other aspects of body image (e.g., Dumitrescu, Dogaru, Duta, Zetu, & Zetu, 2014; Heinberg, Thompson, & Matzon, 2001). Authoritative guidelines regarding the use of these terms do not yet exist. The current study has adopted *negative body image* to describe the range of concerns related to body image, as this is consistent with the work of Dr. Thomas Cash, a renowned body image expert. Body dissatisfaction is an

outcome variable examined in the current study, and is assessed specifically using the following question: “How satisfied/dissatisfied are you with your body right now?”

Prevalence estimates of negative body image are highly variable in the literature due, in part, to the fact that negative body image is defined and measured inconsistently across studies. The prevalence of “weight dissatisfaction” specifically has been estimated at 46% to 66% for women and 35% to 52% for men (Fiske, Fallon, Blissmer, & Redding, 2014). These statistics reinforce other empirical findings suggesting that the majority of women in North America experience mild to moderate body dissatisfaction (Holmqvist & Frisen, 2009; Thompson, 1999). Rodin, Silberstein, and Striegel-Moore (1984) argue that a sociocultural climate placing high value on thinness for women and stigmatizing obesity, in combination with biological aspects of weight regulation, breed this “normative discontent”. This concept suggests that dissatisfaction with weight has become so pervasive among women that negative body image is the norm rather than the exception. Indeed, recent data show that the majority of individuals in the general public believe that most men and women feel self-conscious about their weight and anxious about their appearance (Tantleff-Dunn, Barnes, & Larose, 2011). This research demonstrates that negative body image affects the majority of the population, particularly women, and can develop irrespective of objective weight and physical appearance.

The literature has distinguished the “normative” aspects of negative body image in non-clinical populations from the “disturbed” aspects of negative body image that play a role in the etiology of certain mental disorders. For instance, Body Dysmorphic Disorder (BDD) is defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013) as a mental health condition characterized by preoccupation with a perceived flaw in physical appearance that is not noticeable to others and that leads to repetitive

behaviours around the perceived defect (e.g., excessive grooming, disguising). The diagnosis of BDD can be specified by insight. For some people with BDD, appearance concerns are so rigidly held and detached from the reality of their appearance that they can be considered delusional. Negative body image is also a hallmark symptom of many Eating and Feeding Disorders in the DSM-5 (APA, 2013). Anorexia Nervosa (AN) and Bulimia Nervosa (BN) are both eating disorder diagnoses that depend on the presence of an overvaluation of shape and weight. Overvaluation of shape and weight is not evidenced by negative body image alone, but by significant body dissatisfaction in combination with a large emphasis on physical appearance in the determination of one's self-worth. In individuals with AN, the overvaluation of shape and weight is accompanied by a restriction of energy intake resulting in significantly low body weight and an intense fear of gaining weight. In BN, the overvaluation of weight and shape is accompanied by a recurrent pattern of out of control overeating and extreme efforts to compensate for binges (e.g., self-induced vomiting). As outlined above, negative body image does not necessarily have a significant impact on well-being and functioning in the majority of cases, but there is a subset of people that struggle with clinically significant body image disturbances.

Negative Body Image and Obesity

Body image disturbances affect individuals across the weight spectrum (Olmsted & McFarlane, 2004); however, a meta-analytic review of body image and obesity found a large effect size in the relationship between obesity and negative body image ($d = .85$; Friedman & Brownell, 1995). On average, individuals with obesity demonstrate greater overestimation and distortion of their body size (Garner et al., 1976). Approximately one-third of individuals seeking treatment for negative body image have a BMI in the obese range (Strachan & Cash, 2002) and

over 80% of overweight women seeking body image treatment scored greater than one standard deviation above the normative mean on two assessment measures of negative body image, including the Body Shape Questionnaire (Rosen, Orosan, & Reiter, 1995). Relative to women who had never been overweight, women who were currently overweight reported greater body dissatisfaction and preoccupation with weight (Annis, Cash, & Hrabosky, 2004; Cash, Counts, & Huffine, 1990). Women with a BMI in the obese range reported more characteristics of body dysmorphia than did non-obese controls (Sarwer, Wadden, & Foster, 1998). Interestingly, this same study found that body dysmorphia was not correlated with weight. Additional studies have failed to find a relationship between the degree of obesity and negative body image (as reviewed by Latner & Wilson, 2012). This has led researchers to propose the “threshold effect” theory, which holds that poorer body image increases when people have a BMI within the obese (or even overweight) range, but that additional weight gain beyond that threshold does not influence body image to a significant extent (Sarwer & Thompson, 2002).

Taken together, there is considerable evidence that individuals with higher body weight are more likely than those with a BMI in the normal weight range to have a negative body image. This is an important finding when considering that obesity trends have reached epidemic levels in Canada (Twells, Gregory, Reddigan, & Midodzi, 2014). Recent estimates (Statistics Canada, 2014) suggest that approximately 65% of the Canadian adult population has a BMI in the overweight or obese range. Given the increasing prevalence of obesity, it is increasingly important to consider how negative body image differentially impacts this population.

Theories of Negative Body Image and Obesity

The literature has identified numerous psychosocial processes that shape the psychological impact of obesity on body image (e.g., Byely, Archibald, Graber, & Brooks-Gunn,

2000; Groesz, Levine, & Murnen, 2002; Myers & Crowther, 2009). The sociocultural model has provided a dominant framework for integrating social, cultural, and psychological processes in order to better understand how negative body image develops. Generally, the model posits the existence of societal and cultural ideals of beauty that are transmitted to the general public and then internalized by individuals. Subsequently, these internalized messages impact the degree to which people are satisfied with their appearance based on the extent to which their appearance fits with these ideals. Research has been conducted to explore each of the components of the sociocultural model of body image, and the most important findings are reviewed briefly below.

Western culture has certainly demonstrated a strong track record of promoting a societal beauty ideal for women that is increasing unrealistically thin (Swami et al., 2010). Furthermore, social psychological phenomena like the halo effect (Thorndike, 1920) or the “what is beautiful is good” stereotype (Dion, Berscheid, & Walster, 1972) depict how society rates physically attractive people more positively on admirable attributes, such as intelligence and kindness. There are various sociocultural channels through which these body ideals are disseminated, including peer and parental influence; however, the mass media are arguably the most potent and pervasive sources of transmission. Media messages construct and reinforce powerful meanings about worth, health, and beauty, and North Americans are saturated in a culture of messages regarding the importance of thinness and fitness for women (McGannon & Spence, 2012). Content analyses estimate that 94% of American women’s magazines display an image of a thin-idealized woman on the cover (Malkin et al., 1999). The lack of body diversity in the media implies that deviation from the thin ideal is abnormal (Kilbourne, 1994). In addition to the enthusiastic promotion of the thin-ideal in mainstream media, an equally strong fat-phobia message is perpetuated. The language and images that accompany news stories have been found

to reinforce stigmatizing portrayals of higher body weight, such as its associations with being unhealthy or lazy (Brochu & Esses, 2011). Almost three-quarters of the images for online news stories that depict individuals with higher body weight portray them in a negative manner, whereby they are more likely to be shown eating and with their heads cropped out of the photos as compared with individuals with normal weight (Heuer, McClure, & Puhl, 2011). Fat phobic messages influence attitudes towards individuals with higher body weight and promote stigma and discrimination (McClure, Puhl, & Heuer, 2011; Puhl & Heuer, 2009). Implicit weight stigma has been observed to be at least as strong as those found for race and gender and even to exist in individuals with higher body weight themselves (Puhl & Brownell, 2001). The explicit bias towards individuals with higher body weight is pronounced and appears to be one of the last forms of socially-acceptable prejudice (Puhl, Henderson, & Brownell, 2005).

The internalization of society's appearance standards, including thin-ideals and weight-based stigmatization, is thought to ultimately contribute to increased negative body image (Matz, Foster, Faith, & Wadden, 2002). Social pressures around physical appearance foster negative body image through the internalization of the ideal, whereby people learn to endorse society's appearance ideals. Self-Discrepancy Theory proposes that one's self-concept is a product of the relationship between actual and ideal body representations (Higgins, Bond, Klein, & Strauman, 1986). Body comparisons facilitate a subjective assessment of the discrepancy between one's actual and ideal self. Indeed, perceived societal pressure to be thin predicted increases in body dissatisfaction and is now a known causal risk factor for negative body image (Cattarin & Thompson, 1994; Field et al., 2001; Stice, 2002). This model also provides a theoretical framework through which we can better understand the impact of higher body weight on body image. In a large-scale meta-analytic review of risk and maintenance factors associated with

eating pathology, Stice (2002) found that increased weight is a risk factor for experiencing a perceived pressure to be thin, body dissatisfaction, and dieting, but that weight alone does not appear to be a risk factor for eating disorders. Thus, weight is thought to play a more critical role in promoting the risk factors for eating pathology, like negative body image, than in directly fostering or maintaining eating disturbances.

The sociocultural model is the most robust theory of body image that exists to date. Empirical evaluations have supported its ability to function as a complete model (Thompson & Stice, 2001). However, the model in its simplest form would suggest that everyone would develop negative body image. The model does not account for the biological and cognitive factors that likely mediate the relationship between thin-ideal internalization and body image. A full discussion of other dominant theoretical frameworks of negative body image and potential mediating factors is beyond the scope of this literature review. Interested readers are referred to Cash and Smolak's (2012) *Body Image Handbook* for this review and critical commentary.

Consequences of Negative Body Image in Individuals with Higher Body Weight

Negative body image has emerged as one of the most debilitating psychosocial consequences of having a higher body weight (Schwartz & Brownell, 2004). The clinical importance of body dissatisfaction in obesity was first outlined four decades ago in the seminal work of Stunkard and Mendelson (1967), who argued that body image is the primary psychological disturbance associated with obesity. Prospective and longitudinal studies demonstrate that poor body image is one of the most consistent and significant precursors of negative self-perception, negative emotional states, and unhealthy body-related behaviours (Grabe, Ward, & Hyde, 2008). At elevated levels, body dissatisfaction in individuals seeking bariatric (weight loss) surgery is associated with a host of negative psychological factors,

including depression, low self-esteem, and perfectionism (Rosenberger, Henderson, & Grilo, 2006). Even in a study that found no differences in the self-reported symptoms of depression and self-esteem in women with higher body weight compared with controls who did not have obesity, negative body image was significantly correlated with both depressive symptoms and self-esteem (Sarwer et al., 1998). Similarly, degree of body dissatisfaction has been found to partially mediate the relationship between weight and indices of psychological distress, including depression and self-esteem (Friedman, Reichmann, Costanzo, & Musante, 2002). In sum, body dissatisfaction has emerged as a risk factor for psychological distress for individuals with obesity, which may partly account for the higher incidence of psychiatric illness and compromised quality of life among individuals with obesity (Fontaine & Barofsky, 2001; Taylor, McIntyre, Remington, Levitan, Stonehocker, & Sharma, 2012) and among those with Binge Eating Disorder (Yanovski, Nelson, Dubbert, & Spitzer, 1993).

Body dissatisfaction is a key etiological factor in the development of disordered eating and is considered to be the core pathology that perpetuates clinical eating disorders (Fairburn, 2008; Stice & Shaw, 2012). One way that negative body image is thought to contribute to eating disorders is through its associations with a wide range of maladaptive eating patterns. A reliable finding in the literature is that, for individuals with obesity, body dissatisfaction predicts higher levels of binge eating (Grilo, Masheb, Brody, Burke-Martinade, & Rothschild, 2005; Sarwer et al., 1998). There is a plethora of data to support that the greatest predictor of binge eating is dieting, as it leaves individuals biologically and psychologically deprived which can trigger loss of control over eating and overeating (Fairburn, 2008). Thus, it may be that negative body image prompts attempts to eat in a restrictive way, which then leads to a vulnerability for binge eating. In support of this finding is a 5-year longitudinal study that followed 2,516 adolescents from

diverse ethnic backgrounds and found that negative body image was associated with higher levels of dieting as well as binge eating in females (Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006). Another mechanism that may account for the impact of negative body image on binge eating is emotional eating. The relationship between body dissatisfaction and eating pathology is conceptualized as a functional one, whereby these eating behaviours provide one way in which to cope with the negative self-referential thoughts and emotions that accompany negative body image (Koff & Sangani, 1997; Myers & Rosen, 1999). As reviewed by Stice (2002), negative body image is one of the most consistent and robust risk and maintenance factors for eating pathology.

It has been asserted in the literature that some degree of negative body image may be beneficial for individuals with higher body weight (Heinberg, Haythornthwaite, Rosofsky, McCarron, & Clarke, 2000). It is widely agreed upon that negative body image for individuals who are below the normal weight range is problematic and contributes to highly maladaptive eating patterns. However, for individuals with higher body weight, negative body image may serve an important motivating role regarding the decision to engage in weight management behaviours (Heinberg, Thompson, & Matzon, 2001). Support for this argument comes from Heinberg and colleagues (2000), who found that participants with better body image before entering a 15-month weight loss program showed a tendency to lose less weight in both the short- and long-term. Body image accounted for 24% of the variance in long-term weight loss in this study, suggesting that it plays a role in weight loss by prompting people to initiate and maintain difficult changes to eating and physical activity (Heinberg et al., 2000). On the other hand, high levels of negative body image may undermine individuals' self-efficacy for attempting and sustaining changes. Latner and Wilson (2012) argue that negative body image

does not facilitate weight control and may even contribute to maladaptive eating behaviours that lead to additional weight gain or eating pathology.

A theoretical model has been developed to delineate how internalized weight-based stigma contributes to a “vicious cycle” positive feedback loop (Tomiyama, 2014). This model proposes that weight stigma acts as a stressor, which promotes increased cortisol release and comfort eating, and in turn leads to increased weight. Increased body mass is then thought to contribute to the experience of weight-based stigma, and thus the cycle is reinforced. Furthermore, using linear regression analyses, it was found that body satisfaction was negatively associated with BMI after controlling for baseline BMI (van den Berg & Neumark-Sztainer, 2007). The conclusion was that positive body image may actually be helpful in protecting against increases in weight over time for adolescent females (van den Berg & Neumark-Sztainer, 2007). In addition, Sonnevile and colleagues (2012) found that adolescent females with a BMI in the overweight or obese range and at least somewhat satisfied with their bodies had smaller annual BMI increases over 11 years and were 61% less likely to develop Binge Eating Disorder (BED) compared with girls who endorsed less body satisfaction. Given the empirical evidence, the relationship between negative body image and healthy weight management likely falls on an inverted U-shaped curve (Heinberg, Thompson, & Matzon, 2001). On this curve, individuals with mild to moderate negative body image may feel more motivated to make lifestyle changes to control their weight, whereas individuals at either extreme (minimal or severe body image concerns) are less likely to be inspired to or able to make changes effectively toward a healthy lifestyle. The implications of the U-curve need to be viewed with caution, as the societal stigma around higher body weight is perpetuates the commonly held misconception that individuals are completely in control of their weight and therefore should feel personally responsible for and

ashamed of their body weight and size. Longitudinal research finds that body dissatisfaction does not readily remit over time, but actually tends to increase with age (Bucchianeri et al., 2013; Tiggemann, 2004). Given the significant consequences of negative body image and the fact that it does not resolve on its own with time, there is a clear need to find effective means to address body dissatisfaction, both to ameliorate the associated distress and to prevent the development of eating disorders and other psychopathology (Farrell, Shafran, & Lee, 2006).

Approaches for Improving Body Image

Weight Reduction

The relationship between weight changes and body image is complex. This empirical question has prompted the investigation of the effect of weight loss and weight gain on body image, as well as the stability of changes to body image over time. On the one hand, incidental improvements in body image have been demonstrated with weight loss in response to bariatric surgery (Adami et al., 1994), low calorie diet programs (Cash, 1994), and behavioural lifestyle programs (Ramirez & Rosen, 2001). One study found that both weight loss and body image improved following a 48-week weight loss program, but not in a correlated fashion (Foster, Wadden, & Vogt, 1997). At the mid-point of the program, participants who lost an average of 26.5 pounds experienced the same improvements to body image as those who lost 59.5 pounds. In this study, people who lost 5% to 15% of their body weight experienced improvement in their body dissatisfaction, bringing their body image close to normative levels. Larger weight losses were not associated with further improvements to body image (Foster et al., 1997). The weight loss program consisted of weekly cognitive behavioural weight control sessions, including two sessions dedicated to body image, making it difficult to ascertain whether body image

improvements were due to participation in these sessions, weight loss, or a combination of the two.

Studies have reported that body image improvements following weight loss are short-lived and deteriorate with weight regain. Any weight regain of over 5 kilograms ($M = 8.3$ kg) within the latter half of a 48-week weight loss program was associated with more body dissatisfaction as compared with no regain or continued weight loss (Foster et al., 1997). An empirical examination of a behavioural weight loss program found this same effect of weight regain following weight loss on body dissatisfaction (Cash, 1994). Research has also found a modest but significant positive relationship between the number of previous weight loss attempts and negative body image (Foster et al., 1997). A study dedicated to examining the psychological effects of weight cycling concluded that weight loss and subsequent regain are not associated with long-term adverse psychological effects, but a measure of body image was not included in the investigation (Foster et al., 1996). Body image ratings do not return to normative levels exhibited by the general population following bariatric surgery or other weight loss interventions (Cash, 1994; Dixon, Dixon & O'Brien, 2002). Women who were previously overweight reported significantly more preoccupation with weight and investment in their appearance than women who never experienced a BMI that exceeded the normal range (Annis, Cash, & Hrabosky, 2004).

These findings point to some interesting conclusions regarding the relationship between body image and weight changes. First, body image improves in response to relatively small reductions in weight (the initial “honeymoon period” of weight loss), and weight loss beyond this point confers no additional advantage. The same pattern has also been identified for depressive symptoms. Depression scores were cut in half after only 8 weeks and approximately 11 lbs. of weight loss, but additional weight loss (30 lbs. at one year) had no further effect on

mood (Wadden, Foster, & Letizia, 1994). Second, improvements in body image deteriorate over time. This deterioration may be attributed the realization that weight loss is difficult to maintain, the ideal weight/shape has not been obtained, and/or other aspects of life did not improve as expected following weight loss. Finally, these results support a “phantom fat” hypothesis whereby anxiety and preoccupation with weight persists despite weight loss (Annis, Cash, & Hrabosky, 2004).

When considering the use of weight loss programs in treating body image, it is critical to consider the empirical data regarding the likelihood of sustained weight loss as a result of these programs. A recent systematic review on weight loss lifestyle modification programs found that, at one-year follow-up, 30% of participants had a weight loss equal to or above 10%, 25% of participants had weight loss between 5% and 9.9%, and 40% of participants had weight loss less than 4.9% (Christian, Tsai, Bessesen, 2010). Weight loss reaches its peak within 6 months of starting the program, but then the trend reverses thereafter. Five years after completing structured weight-loss programs, the average individual maintained a weight loss of approximately 3% of their initial body weight and up to 50% of participants will return to their original weight (Anderson, Konz, Frerich, & Woof, 2001; Wing, 2002). In sum, the data indicate that traditional lifestyle modification programs are effective for inciting acute weight loss within the first year, but are not effective for long-term weight loss (Dalle Grace, Calugi, & Marchesini, 2014).

The set-point theory is thought to account for the difficulties that individuals, especially those who with higher body weight, have in losing weight and keeping it off. The set-point theory posits that body weight is maintained at a genetically-determined set level, and deviations from this preferred set point are resisted and minimized by a complex biological feedback control system involving compensatory changes in appetite and metabolic efficiency (for a

complete overview, refer to Leibel, 2008). Research has found that this internal “thermostat” for regulating weight can evolve over time with changes to eating and weight, whereby the body may fight to maintain a higher weight. Thus, even in the event that weight loss reliably improves body image, no weight loss interventions aside from bariatric surgery have been shown to result in sustained weight loss among individuals with higher body weight.

Cognitive Behavioural Therapy for Body Image

A variety of approaches have been developed to improve negative body image without necessitating weight loss, ranging from fitness training interventions to boost self-efficacy and facilitate a focus on the body’s function over appearance (e.g., Martin & Lichtenberger, 2002) to media literacy programs focused on the critical evaluation of messages portrayed in the media regarding the thin-ideal standard of beauty (e.g., McVey, Davis, Tweed, & Shaw, 2004). These interventions have received some empirical support (as reviewed in Farrel, Shafran, & Lee, 2006); however, Cognitive Behavioural Therapy (CBT) has emerged as the most effective treatment for improving body image.

Cognitive Behavioural Therapy is a short-term, skills-based psychosocial intervention that is based on the premise that thoughts (cognitions), behaviours, and emotions are intricately connected (Beck, 2011). That is, the way one interprets a situation affects behaviours and emotions in that situation, and, conversely, the way one behaves affects thinking patterns and emotions. To illustrate, take an example of an individual who notices two strangers laughing to each other as they walk by her on the street. In this situation, the individual may have an automatic interpretation that they are judging her weight, which would, in turn, produce unpleasant emotions such as sadness or shame. In response to the thought that she has been negatively evaluated by others and to the negative affect, she may put on a jacket to hide her

shape, cancel social plans later that day, or order comforting food to eat at home in order to cope with her negative emotions. This example depicts how inaccurate and unhelpful thoughts (“cognitive distortions”) can lead to negative emotions and maladaptive behaviours, which in turn can reinforce the cognitive distortion. Research has shown that behaviours like avoidance (cancelling plans, wearing looser clothing) perpetuate negative thinking because individuals inadvertently miss opportunities to challenge their beliefs. For example, if this person does not engage in social interactions or makes attempts to hide her shape, she loses the chance to gather evidence that would contradict her initial interpretation. Furthermore, engaging in maladaptive coping, like overeating, can contribute to weight gain, and thus leave her more vulnerable to negative body image and external judgment. As applied to body image, CBT seeks to disrupt this feedback cycle by identifying and modifying negative evaluations about one’s body and irrational beliefs about the importance of appearance, as well as identifying and changing problematic behaviours relating to body checking or avoidance (Cash, 2008). Cognitive behavioural techniques aim to change these thoughts about the body such that they include more adaptive or accurate thoughts, in a process known as cognitive restructuring (Cash, 2008). In the aforementioned example, cognitive restructuring would focus on having the client consider other possible interpretations of the situation, such as the possibility that they were laughing about something else. Based on the CBT model, changing these negative self-referential patterns of thinking will help soften the intensity of negative emotions about the body and promote adaptive behaviour changes (Cash, 2008).

Dr. Thomas Cash (2008) developed the most widely used and empirically supported CBT protocol for body image concerns. His manual aims to address body image disturbance by assessing negative body image, providing relaxation training, challenging problematic

assumptions about appearance, restructuring cognitive distortions relating to body image, decreasing avoidant and checking behaviours, increasing mastery and pleasurable activities, solving problems, and teaching assertiveness. His most recent edition of the protocol includes additional strategies designed to address the behavioural and perceptual aspects of negative body image, such as using exposure techniques to challenge perceptual distortions and address patterns of body avoidance (Cash, 2008).

Efficacy of Cognitive Behavioural Therapy for Body Image

The majority of the research examining the efficacy of CBT for body image has focused on individuals with eating disorders. As reviewed previously, there is a high co-occurrence between body dissatisfaction and eating disorders, and thus they are often targeted in an integrated fashion using CBT (Rosen, 1996). Cognitive behavioural therapy is considered the most effective treatment for eating disorders, including Bulimia Nervosa and Binge Eating Disorder (National Institute for Health and Care Excellence [NICE], 2004). Cognitive behavioural therapy protocols for eating disorders consist of components explicitly addressing body image as well as strategies targeting eating disorder symptoms that, while not specifically focusing on body image, emphasize a reduction in the importance of weight and shape, a rejection of narrow societal ideals of beauty, and an acceptance of a natural body weight (e.g., Foster et al., 1997). Review articles have found that body image interventions embedded within comprehensive eating disorder treatments exert a moderate effect on body image (Cash & Hrabosky, 2004; Rosen, 1996). However, the multi-component nature of CBT for eating disorders makes it difficult to determine whether these improvements in body image are specifically due to the treatment components focused on body image or more generally to the amelioration of eating pathology or changes in weight. Reviews of stand-alone CBT

interventions for body image in non-clinical populations with elevated body dissatisfaction demonstrate that these treatments are highly effective (Cash & Hrabosky, 2004; Cash & Strachan, 2002). In the case of stand-alone CBT interventions for body image, it can be said with greater certainty that improvements in body image are due to the strategies embedded within the intervention. Thus, there is good support for using CBT to improve body image outside of an eating disorder protocol.

Body dissatisfaction is also a significant source of psychological distress among many individuals without eating disorders, and thus is an important target for intervention even among people who do not have an eating disorder or who present with subclinical eating pathology (as reviewed in Pearson et al., 2012). Numerous trials have shown that individuals with negative body image who do not have an eating disorder can benefit from CBT. One study conducted with normal weight women ($N = 23$) who endorsed high levels of body image disturbance but no eating disorder found that six weeks of CBT improved body image to a greater extent than an attentional control (Rosen, Saltzberg, & Srebnik, 1989). Specifically, CBT reduced body dissatisfaction by 60%, body shape concerns by 37%, body avoidance by 35%, and body size overestimation by 19%, and improvements in body image were maintained at the two-month follow-up. In a separate study, female college students ($N = 31$) who reported significant body image disturbances were randomly assigned to receive six sessions of CBT or to a wait-list control group (Butters & Cash, 1987). The CBT group reported significantly greater improvements than the control group on affective measures of negative body image, including reduced anxiety related to body exposures and increased body satisfaction, and improvements on maladaptive body image cognitions, including reduced preoccupation with appearance and cognitive distortions regarding appearance. These findings indicate that, along with individuals

with eating disorders, CBT can provide benefits to women without significant eating pathology who experience negative body image.

Jarry and Berardi (2004) completed a comprehensive literature review of the characteristics and efficacy of various stand-alone treatments for body image. They identified 18 studies that met the selection criteria. Twelve studies were conducted with non-clinical, body dissatisfied samples, and only one study focused on individuals with a current eating disorder. Interestingly, all but one of the 18 studies that were reviewed examined a cognitive behavioural approach. The exception was a study that employed a Pennebaker writing exercise (Pennebaker & Beall, 1986). Of the studies examining CBT, four employed individual CBT and 13 employed group-based CBT. Eleven studies compared CBT to a no treatment or a wait list control group whereas three studies contrasted CBT with another intervention that did not involve a body image CBT component (i.e., reflective therapy, exercise therapy, weight loss program). Overall, the review demonstrated that CBT strategies for body image, across individual and group-based contexts, led to improvements on measures of the evaluative component of body image at post-intervention. The most reliable post-treatment changes occurred within the attitudinal and behavioural components of body image. This finding is not surprising considering that many CBT protocols employed by the studies in this review did not intervene with the perception component of body image. Cognitive behavioural therapy outperformed exercise therapy and weight control for body image improvements, although these approaches did produce a positive effect on body image. The Pennebaker writing task was not found to be an effective means of improving body image. The review did provide support for reflective therapy, which Dworkin and Kerr (1987) found to be as effective as CBT in improving body image. The studies that examined psychological outcomes of the interventions showed overall improvements in self-

esteem and psychological distress (e.g., Cash and Hraboksy, 2003) as well as depression (Cash & Lavallee, 1997; Grant & Cash, 1995), which supports the notion that improving body image may lead to general improvement in psychological health. Nine of the 18 studies included follow-up data, and all nine found that improvements in the subjective component of body image were maintained. The review concluded that stand-alone body image interventions that include CBT strategies hold promise for improving body image, eating behaviours, and psychological factors.

The effectiveness of CBT for body image may not rely on the presence of a therapist for the entirety of the 6-week treatment. Largely self-directed CBT (with modest therapist contact) improved multiple facets of body image and psychosocial functioning to the same extent as in-person group CBT (Cash & Lavallee, 1997; Grant & Cash, 1995). However, completely self-directed CBT resulted in different outcomes. Self-directed psychoeducation plus self-monitoring was compared to self-directed psychoeducation, self-monitoring, and cognitive techniques for individuals who experience negative body image, and the treatments were found to have equal efficacy (Strachan & Cash, 2002). Both groups, regardless of the presence of obesity, reported improvements to their psychosocial functioning, including social anxiety, social self-esteem, and depression. The psychoeducational aspect of the CBT program for body image was designed to be multifaceted and highly personalized as a way to compensate for the lack of therapist contact. However, the attrition rate of 53% in this study was high and it was hypothesized that the lack of a therapist hindered compliance with the treatment. Dropouts were found to have higher initial BMIs, more entrenched body image behaviours, and more depressive symptomatology, all of which may undermine motivation for change in the absence of the structure, accountability, feedback, and support that even modest therapist contact can provide.

The most rigorous meta-analytic review of body image interventions conducted to date examined 62 studies of stand-alone interventions for body image that included a control group, random assignment, and at least one pre- and post-assessment of body image (Alleva, Sheeran, Webb, Martijn, & Miles, 2015). Furthermore, this meta-analysis identified the specific features of the interventions and change techniques that led to body image improvements. The vast majority of the interventions reviewed were CBT, and the other treatments could be categorized into four broad categories: fitness training, media literacy, self-esteem enhancement, and psychoeducation. Overall, the interventions under review produced a reliable small to medium improvement in body image ($d = 0.38$) and in the internalization of the beauty ideal ($d = 0.37$), and a large effect on the tendency to make social comparisons ($d = 0.72$).

The review identified 48 therapeutic strategies in six broad categories in what they termed “a taxonomy of change techniques” (Alleva et al., 2015). According to the study, the most effective interventions in the review discussed cognitions and their role in body image, taught monitoring and restructuring of cognitions, changed negative body language, and incorporated guided imagery and exposure. In contrast, strategies associated with self-esteem enhancement, such as teaching self-esteem building exercises and discussing individual differences in body shape, were associated with poorer body image (Alleva et al., 2015). Despite the finding that cognitive restructuring is a key ingredient in effective body image treatment, there is no data to support that changes in cognitive mechanisms mediates the relationship between CBT and better body image outcomes. Both the systematic review by Jarry and Berardi (2004) and the meta-analysis by Alleva and colleagues (2015) claimed that their results supported the notion that CBT is an effective body image treatment. However, within both reviews, only two studies were included that examined the effectiveness of CBT for body image

for individuals with higher body weight. Without further data, the assertion that CBT is effective for improving body image must be viewed with caution. The two trials on CBT for body image in individuals with higher body weight are reviewed in detail below.

Efficacy of CBT for Body Image in Individuals with Higher Body Weight

Only one study to date has examined a stand-alone CBT intervention for body image in a non-clinical sample of individuals with higher body weight. Rosen, Orosan, and Reiter (1995) examined the effectiveness of a CBT intervention (Rosen, 1977) on body image, psychological functioning, and eating patterns among women ($N = 51$) with a BMI in the overweight. There was no screening for negative body image in this study in order to “accommodate the full range of negative body image in persons who are overweight who might seek this treatment” (Rosen, Orosan, & Reiter, 1995, pp. 28) Twenty percent of participants met criteria for BED. Participants were informed that the primary aim of the treatment was to improve body image, not to lose weight. Participants were randomly assigned to either eight weekly sessions of CBT (conducted in group format for 2 hours and consisting of one therapist and four to five participants) or a waiting list control group. The intervention included psychoeducation, self-monitoring of negative body-related thoughts, body-related exposures (e.g., wearing short-sleeved shirts; uncrossing their arms when sitting), and challenging maladaptive assumptions about their beliefs. Therapists were either clinical psychologists or post-masters level graduate students in psychology.

Participants in the CBT group reported significant improvements across all measures, including negative body image (including body dysmorphia, body size estimation, and body dissatisfaction), maladaptive eating (e.g., binge eating), and mental health symptoms following the intervention, and improvements persisted over the follow-up period. Participants’ weight

remained stable at post-intervention and follow-up. These findings suggest that body image and other measures of psychological distress can improve among women with higher body weight in response to a stand-alone CBT intervention for body image and that these improvements are independent of weight change.

Ramirez and Rosen (2001) sought to examine the use of body image therapy as an adjunct to a behavioural, lifestyle weight loss program. They randomly assigned men and women with obesity ($N = 65$) to one of two conditions: a 16-session weight management group which included nutrition and behavioural self-management targeting diet and exercise, or to the same weight management group with an additional 12 weekly 2-hour group-based sessions of CBT focused on body image (commencing after weight management procedures started). The researchers hypothesized that the adjunctive body image treatment would improve the long-term maintenance of weight loss. Both groups experienced significant weight loss as well as improved body image, psychological distress, and self-esteem. These improvements were comparable across both groups, and maintained 3 months later. However, both groups reported a significant increase in body dissatisfaction between the 3-month and 1-year follow-ups, and this increase corresponded to weight regain over this time period. These findings suggest that behavioural weight management programs alone lead to weight loss and improvement in body image, but only for the first three months of weight loss. When weight loss plateaued or weight regain started after three months, body image was affected negatively. This finding is consistent with the data supporting the notion of a “honeymoon phase” for weight loss and body image, which is short-lived and highly variable in the long-term. Interestingly, the adjunctive CBT intervention for body image did not increase the efficacy of the weight management program, prevent weight regain, or maintain improvements in body image (Ramirez & Rosen, 2001).

Limitations of CBT for Body Image in Individuals with Higher Body Weight

The empirical literature suggests that CBT interventions hold great promise for the treatment of negative body image in individuals with normal weight; however, the limited research specifically examining body image interventions in individuals with higher body weight is much less compelling. There are three primary limitations to the use of CBT for body image in individuals with higher body weight. First, CBT interventions for body image are often empirically tested in normal weight individuals, primarily white female college students or patients with eating disorders, and the research examining body image interventions in overweight and obese populations is scarce. Second, only one of the two trials that have examined cognitive behavioural treatments for body image in individuals with higher body weight reported promising outcomes and that study was conducted over 20 years ago (Rosen, Orosan, & Reiter, 1995). Finally, although both a systematic review (Jarry & Berardi, 2004) and a meta-analysis (Alleva et al., 2015) identified cognitive restructuring as a particularly important component of effective treatment for body image, it is precisely this strategy that is likely to be challenging to employ with individuals with higher body weight given that they may possess objective evidence to support negative body image thoughts (e.g., weight-based stigma and discrimination, including comments from strangers, loved ones, and health care professionals; Puhl & Brownell, 2001; 2006; Puhl & Heuer, 2009). This is not to imply that the pervasive issue of weight-based stigma should be managed by shifting the perspective of victims of discrimination. The development and implementation of a multilevel approach to stigma and public health is how negative body image will be more systematically addressed over time (Cook, Purdie-Vaughns, Meyer, & Busch, 2014; Nutter et al., 2016). Discussion of the much-needed structural-level changes to the socio-political environment is beyond the scope of this

paper (for a review, see Russell-Mayhew & Grace, 2016), but these changes are an absolutely vital part of the long-term picture of reducing negative body image for individuals with higher body weight. In the meantime, it is important that therapeutic strategies for individuals with higher body weight are developed with a consideration for the reality of weight-based stigma in their lived experiences. Thus, the cognitive strategies that have been shown to be effective in addressing negative body image in normal weight individuals may not have the same effect in higher weight individuals. The current study was developed to address these questions about the impact of cognitive restructuring on body image in higher body weight individuals. Specifically, the objective of the current study was twofold: 1) to examine whether brief training in cognitive restructuring has an impact on body image among higher weight individuals, and 2) to compare the impact of brief training in cognitive restructuring to an alternative treatment strategy, namely self-compassion, that, from a theoretical perspective, addresses some of the limitations of using cognitive strategies for higher weight individuals.

Compassion-Based Treatments

Compassion-based treatments may be a particularly helpful approach for improving body image among individuals with higher body weight (Braun, Park, & Gorin, 2016). Compassion-based training is part of a new wave of psychotherapies that has shifted the emphasis from changing the *content* of negative thoughts (as is done in CBT) to changing the *relationship* one holds towards such thoughts for treating emotional difficulties (as reviewed in Hofmann, Sawyer, & Fang, 2010). In addition to the distorted and exaggerated content of body-related cognitions, an inflexible adherence to these thoughts and the struggle to control or eliminate them may serve to perpetuate negative body image. Given that individuals with higher body weight may have objective evidence to support their negative body-related thoughts, teaching

people to adopt a more accepting and compassionate lens when viewing their body-related thoughts may prove to be a more effective approach for improving body image than teaching people to alter their thoughts. The extant literature that has highlighted compassion-based approaches as one promising treatment pathway for negative body image among people with higher body weight is reviewed below.

Self-compassion is a concept originally born from Buddhist philosophies. Compassion involves bringing awareness and connection to other people's suffering and having a genuine desire to be kind in response to that pain. Compassion entails the adoption of a nonjudgmental stance to those who fail or do wrong by framing behaviours in the context of shared human experience (Neff, 2003a). Self-compassion occurs when these facets of compassion are extended to oneself (Brown, 1999). According to Dr. Kristin Neff (2003a), a pioneer of self-compassion research, there are three interconnected components of self-compassion: 1) self-kindness versus self-judgment; 2) common humanity versus isolation; and 3) mindfulness versus over-identification. *Self-kindness* refers to the tendency to be caring towards and accepting of oneself rather than being critical in response to failure or a disliked quality. The sense of *common humanity* involves viewing the mistakes and suffering of people in the context of the broader human experience. This aspect offers an inclusive perspective whereby individuals feel connected with others, in contrast to feeling alone, and as though pain or mistakes should not be happening. *Mindfulness* refers to the intentional attentional awareness of one's surroundings with a curious attitude. In the context of self-compassion, mindfulness involves being in touch with painful experiences in a balanced manner that does not involve ignoring or ruminating on disliked aspects of oneself or on stressful experiences. Mindful awareness is an important part of self-compassion because it provides a signal as to when a compassionate response may be

required. However, it is also important to pay attention in a grounded way, rather than becoming absorbed in the narrative driving the suffering, known as over-identification. For example, in response to getting dressed in the morning, an individual can respond to critical thoughts about his/her body with mindfulness (e.g., This is very hard for me right now, I'm thinking that I look hideous and it's causing a lot of frustration and shame), with an appreciation for the fact that this experience is typical for others (e.g., Many people are dissatisfied with their bodies, I'm not the only one that struggles with this), and with kindness (e.g., Let me be gentle with myself right now and start to refocus my attention on what I was doing before I looked in the mirror). As these three dimensions help to illustrate, self-compassion is not a passive state of mind, but rather promotes confronting experiences in a gentle and kind manner.

Self-compassion was introduced into Western medicine as an alternative to conceptualizations of psychological well-being, predominantly self-esteem (Neff, 2003a). Self-esteem is defined as the culmination of evaluations regarding personal performance in comparison to a set of standards in areas of perceived importance or value (James, 1890). The psychological benefits of high self-esteem and consequences of low self-esteem have been widely disseminated in media and academic literature; however, the aim of enhancing self-esteem as a panacea for improving mental health has been met with increasing criticism for a number of reasons. First, self-esteem is contingent upon meeting societal standards of beauty, and thus may be difficult to maintain (Harter, 1999). Self-compassion, in contrast, involves conceptualizing one's experience in the context of the human experience (Neff, 2003a). Second, research shows that self-esteem is resistant to change by means of an intervention (Swann, 1996). In contrast, studies have found that while certain people have a disposition to self-

compassion (Gilbert & Irons, 2004), it is also a strategy that people can acquire and practice to promote mental health as opposed to being a static personality trait (Neff, 2003a).

A large body of literature suggests that individuals higher in trait self-compassion experience less psychological distress (for a review, see Barnard & Curry, 2011). High levels of trait self-compassion have been associated with a range of positive outcomes pertaining to psychological health, including lower anxiety, depression, perfectionism, rumination, and fear of failure, as well as greater happiness, optimism, wisdom, initiative, and emotional intelligence (for a review, see Neff & Germer, 2012). A meta-analysis of 20 empirical studies found a large effect size when examining the link between self-compassion and psychopathology (MacBeth & Gumley, 2012). Self-compassion is also associated with enhanced social functioning, including higher levels of relationship functioning, empathetic concern, altruism, perspective taking, and forgiveness (Neff & Pommier, 2012). Self-compassion buffers the effects of negativity, but not through the promotion of avoidance. In fact, higher self-compassion is associated with a reduced tendency to suppress unwanted thoughts (Neff, 2003a), and an increased tendency to validate the importance of emotions (Leary et al, 2007; Neff, Hseih, Dejitterat, 2005). Upon asking individuals to describe their greatest weakness in a mock job interview, those who were higher in self-compassion provided the same number of negative self-descriptors as those low in self-compassion, but were less anxious after the interview (Neff, Kirkpatrick, & Rude, 2007). Higher self-compassion is also associated with a tendency to use language that indicates connection (e.g., using more first person plural pronouns such as ‘we’). Thus, self-compassion may decrease maladaptive emotional reactions because the context of the shared humanity reduces the threat associated with being imperfect or making mistakes.

Efficacy of Self-Compassion Training

Germer and Neff (2013) developed an 8-week Mindful Self-Compassion (MSC) Program to explicitly cultivate self-compassion. The goal of this intervention is “resource building”, whereby MSC aims to provide participants with a variety of tools to increase self-compassion which can be integrated into their lives according to their needs (Neff & Germer, 2012). A pilot study examining MSC in healthy individuals ($N = 23$) found that the intervention resulted in significant improvements in self-compassion, mindfulness, life satisfaction, happiness, depression, anxiety, and stress (Neff & Germer, 2012). These improvements were maintained six months later for the 13 participants who completed the follow-up assessment. Participants also reported enjoying the group, indicating that participation was a positive experience. In a follow-up to this study, the researchers recruited healthy individuals ($N = 51$) and conducted a pilot randomized controlled trial of the MSC program compared with a wait list control (Neff & Germer, 2012). Relative to the control group, the MSC group reported greater improvements in self-compassion ($d = 1.67$; large effect), mindfulness ($d = 0.60$; moderate effect), compassion for others ($d = 0.68$; moderate effect), life satisfaction ($d = 0.51$; moderate effect), depression ($d = 0.86$; large effect), anxiety ($d = 0.76$; moderate effect), stress ($d = 0.37$; small effect), and avoidance ($d = 0.50$; moderate effect). The most significant improvements in self-compassion were seen from pre-intervention to the third session, showing a fairly rapid effect of the training (Neff & Germer, 2012). Overall, MSC showed great promise as a means to improve general psychosocial well-being among healthy individuals in a relatively short period of time.

Self-Compassion for Negative Body Image

All three components of self-compassion have clear applications for body dissatisfaction. The self-kindness component of self-compassion undermines the inclination to criticize rather than accept one’s body as it is. The development of a common sense of humanity considers

physical appearance from a more inclusive perspective that can mitigate feelings of shame associated with not meeting sociocultural ideals (McKinley & Hyde, 1996). The mindfulness component of self-compassion can help people relate differently to negative self-referential thinking (“I’m ugly”, “No one will ever find me attractive”) and emotions (guilt, shame), without over-identifying or avoiding these experiences. Furthermore, mindfulness encourages an acceptance of difficult experiences with simultaneous exposure to stressful realities of life. This balance within self-compassion is important in the context of obesity, because, as Wilson (1996) argues, acceptance of one’s body should not be confused with complacency and failure to adhere to well-founded advice around physical health and weight loss. Overall, these theoretical considerations support the notion that self-compassion may offer a beneficial approach for improving body image, especially for individuals with higher body weight.

Additional support for the application of self-compassion to body image comes from correlational research examining the relationship between trait self-compassion and body image related constructs. Female undergraduates’ self-reported self-compassion moderated the strength of the negative relationship between BMI and body image flexibility after controlling for self-esteem (Kelly, Vimalakanthan, & Miller, 2014). Higher BMI was correlated with less body image acceptance and flexibility only for individuals who were low to average in self-compassion levels, whereas weight and body image were not correlated in individuals with high self-compassion. Higher self-compassion is associated with lower body dissatisfaction, body-related shame, social physique anxiety, and objectified body consciousness in female athletes (Mosewich et al., 2011). Trait self-compassion in breast cancer survivors buffered the relationship between body image disturbance and psychological distress (Przedziecki et al., 2012). Self-compassion is also associated with lower levels of social comparison and has fewer

contingencies on perceived appearance, which act as mechanisms through which societal weight stigma is internalized (Neff & Vonk, 2009). Women with and without eating disorders have been shown to benefit from trait self-compassion, as it is associated with less shame, body image disturbance, and drive for thinness (Ferreira, Pinto-Gouveia, & Duarte, 2013). In a study of female undergraduates recording their self-compassion, body image, and eating patterns in a journal over four days, it was found that those who responded to appearance flaws with self-compassion also reported less disordered eating (Breines, Tu, & Chen, 2014). This finding held even when daily self-esteem was controlled for. Together, these results indicate that trait self-compassion can buffer the effect of body image and may be a preventative factor for eating pathology.

It is not simply that individuals high in self-compassion enjoy better body image than those low in self-compassion. One study asked female college students to record their daily levels of self-compassion, self-esteem, body appreciation, body satisfaction, state body image, intuitive eating, and dietary restraint in a diary across a one-week time period (Kelly & Stephen, 2016). The study found that peoples' body image generally remained stable over the week, and the average level of self-compassion over the week predicted their average level of body image and eating behaviours even after controlling for self-esteem. The study also identified that at least one quarter of the variance in body dissatisfaction was attributable to day-to-day fluctuations in self-compassion that an individual might experience. On the days when the participants treated themselves more compassionately than what was typical for them, they reported feeling more appreciative of and satisfied with their bodies, and also approached eating more intuitively and with less restraint. The lack of interaction between an average level of self-compassion and daily deviation in self-compassion suggests that people, regardless of trait self-

compassion levels, are likely to benefit from learning to respond to their daily stressors with more compassion than what is typical for them. These findings are consistent with research studies showing that experimental primes and interventions that build self-compassion can improve a given individual's body image and eating behaviour (e.g., Adams & Leary, 2007). These studies are described in the next section.

Impact of Self-Compassion Training on Negative Body Image

The empirical literature on self-compassion training for negative body image is in its infancy; however, the preliminary results for compassion-based approaches for maladaptive eating and body-related attitudes are promising. Adams and Leary (2007) were the first to conduct an experimental investigation to test the impact of self-compassion on maladaptive eating and restrictive eating attitudes. Undergraduate students were invited for a “taste test” of different candies. Two groups received a “preload” food (a doughnut) prior to the candy taste test, while the third group only received a glass of water. In one of the two groups who received a preload food, participants were provided with a verbal prompt that was thought to induce self-compassion. This prompt involved telling them that other participants felt bad about eating the doughnut too, and encouraged them to not feel badly about themselves for having it. The prompt also attempted to normalize that everyone eats unhealthily sometimes, and there is no reason to feel badly. The results showed that participants in both preload groups reported less self-compassion than the control group who did not have the doughnut, but this effect was eliminated by self-compassion induction. The self-compassion group reported comparable eating attitudes to those that did not have the doughnut, indicating that this brief verbal prompt reduced the self-criticism associated with eating the doughnut. Similarly, eating the doughnut only produced negative affect for those participants who were not given the self-compassion prompt. This study

demonstrates that a brief self-compassion induction can attenuate the negative affect and self-criticism associated with breaking a dietary rule.

Albertson and colleagues (2014) conducted the first trial of self-compassion training in a non-clinical sample of females with normal weight who were experiencing negative body image. Participants were randomized to either a 3-week meditation group (consisting of podcasts of 20-minute self-compassion meditation to be practiced daily) or to a wait list control group. Participants reported using the podcast meditations an average of three to six times per week. Compared to the control group, the self-compassion group experienced greater increases in self-compassion (19% in treatment group versus 5% in control group; $d = 0.82$), as well as greater improvements in body dissatisfaction ($d = 0.73$), body shame ($d = 0.68$), body appreciation ($d = 0.62$) and contingent self-worth based on appearance ($d = 0.45$). These improvements were maintained three months later. These results highlight that self-compassion training with no therapist contact can not only reduce distress associated with body image but also increase a sense of body appreciation. This finding is in line with other studies that indicate that self-compassion is linked to an increase in psychological strengths (e.g., Neff & Germer, 2012). Furthermore, the intervention appeared to change not only body image attitudes but also the foundations upon which their attitudes rest. The intervention was found to significantly decrease the degree to which self-worth was contingent on perceived appearance. Interestingly, no relationship was found between level of practice and outcomes, with the exception of body appreciation, suggesting that even brief training in self-compassion is sufficient to change attitudes.

Self-compassion training also appears to be beneficial for individuals with eating disorders. Gale and colleagues (2012) found that the integration of Compassion-Focused

Therapy (CFT) in an outpatient eating disorder program yielded significant improvements in eating disorder pathology in their participants ($N = 99$) compared with routinely collected data from the outpatient program. Specifically, the CFT group improved significantly more than the control group on all subscales of the Eating Disorder Examination Questionnaire, with large effects for weight and shape concerns. In a more recent pilot randomized controlled trial (Kelly & Carter, 2015), individuals with BED were randomly assigned to one of three conditions: 1) three weeks of food planning plus self-compassion exercises (listening to brief mindful self-compassion podcasts from Dr. Neff's website on a daily basis); 2) three weeks of food planning alone; or 3) a wait list control condition. The self-compassion group reported significantly greater improvements in global eating disorder pathology, eating concerns, and weight concerns than the other two groups. These findings suggest that self-compassion may have utility, both as a stand-alone and as an adjunctive intervention for patients with eating disorders and body image concerns. What remains to be known is whether self-compassion training is helpful for individuals with higher body weight.

From a functional perspective, the development of self-compassion is a more adaptive means of coping with sense of failure or inadequacy than problematic eating patterns or other maladaptive behaviours (Rogge, Greenwald, & Golden, 2004). Tylka and Kroon Van Diest (2015) proposed that self-compassion may serve as a protective factor against negative body image by: 1) directly mitigating the outcomes of negative body image, 2) preventing the initial occurrence of a risk factor for body image issues (e.g., thin-ideal internalization), and/or 3) moderating a risk factor for negative body image and hindering its effects (e.g., social comparisons). The authors also posit that it is likely that self-compassion works to disrupt the relational chain through which the risk factors for body dissatisfaction operate. In combination

with the theoretical rationale for using self-compassion for body image disturbance, these findings from correlational studies provide preliminary support that self-compassion would be a helpful strategy for higher body weight individuals and experience body dissatisfaction. Braun, Park, and Gorin (2016) reviewed 28 studies supporting the role of self-compassion as a protective factor against negative body image and eating disorders. Findings across various study designs showed that self-compassion is inversely related to body image and eating disorder outcomes in both non-clinical and eating disordered populations. Lower self-compassion is associated with various risk factors for eating disorders, such as drive for thinness, whereas higher self-compassion is associated with higher body image flexibility and body appreciation, and with lower body image avoidance. The burgeoning empirical literature on self-compassion for body image justifies the use of self-compassion training for the improvement of body image in individuals who are at an above average weight.

Dispositional Strategies for Coping with Negative Body Image

In the absence of the conscious and voluntary use of strategies such as cognitive restructuring or self-compassion to manage negative body image, people automatically employ means of coping. It is purported that the activation of negative body-related schemas prompts affective responses that then cue self-regulatory coping strategies to manage distressing experiences relating to body image (Cash, Santos, & Williams, 2005). Coping can include any number of emotional, cognitive, and behavioural attempts to manage external or internal demands that are perceived to be taxing on the individual. Coping strategies vary widely in their adaptiveness, such that certain strategies enable people to manage difficult experiences in a way that is protective from psychopathology whereas others approach negative experiences in a way that makes people more vulnerable to longer and more severe periods of distress (Aldao, Nolen-

Hoeksema, & Schweizer, 2010). For example, the use of emotion-oriented coping (efforts directed at regulating the affective experience rather than managing the source of the stress) and avoidance coping (efforts to distract or escape as opposed to approach and engage) has been associated with increased eating disturbances, psychological distress, psychiatric symptomatology, and health problems (Koff & Sangani, 1997). These two styles of coping are discussed in greater details below, with a specific focus on their relevance to negative body image.

Emotion-Oriented Coping for Body Image

One of the most prominent emotion-oriented coping strategies is rumination. Rumination is characterized by a focused attention or repetitive processing of distressing information. Emotion-oriented coping such as rumination is linked to higher levels of depression, anxiety, and distress, and has a detrimental effect on body image (e.g., Whatley, Foreman, & Richards, 1998). Ruminative cognitive patterns have been associated with the etiology of bulimic behaviours (Nolen-Hoeksema, Stice, Wade, & Cohon, 2007) and ruminating about body image accounts for eating disturbances more than body dissatisfaction alone (Verplanken & Velsvik, 2008). The majority of the research examining the impact of emotion-oriented coping on body image and weight-related issues has focused on clinical eating disorders; however, one research study has examined the effect of induced rumination on body image in a non-clinical sample. Participants who were prompted to attend to self-focused thoughts after reading a negative body image scenario (“You stare at yourself in the mirror and can’t help but feel disgusted with yourself... You had promised yourself you would lose weight”) reported increased body image dissatisfaction and anxiety than those who were cued by prompts that encouraged them to turn their attention to other things (Etu & Gray, 2010). Although the literature is small, there is

empirical evidence to suggest that individuals, especially those with eating disorders, cope with negative body image by ruminating about their weight and dietary intake, and that rumination leaves them vulnerable to eating pathology.

Avoidant Coping for Body Image

Cash, Santos, and Williams (2005) conducted research to identify typical means of coping with body image in a non-clinical sample. Their work shows that the majority of people tend to engage in avoidant coping strategies, such as distraction, to manage negative body image. As noted above, the use of distraction can be an antidote to ruminative thinking styles, which is a strong predictor of poor body image (Etu & Gray, 2010). Distraction, as compared with rumination, has also been found to help individuals manage negative emotions that result from laboratory-based mood-inductions (Morrow & Noel-Hoeksema, 1990), naturally occurring depressive symptoms (Nolen-Hoeksema & Morrow, 1993), and the trauma-related stress of an earthquake (Nolen-Hoeksema & Morrow, 1991). However, the use of distraction is reinforced to the extent that it provides temporary relief from distressing body image experiences, and may be more harmful than beneficial in the long-term if used excessively or used inappropriately. For example, people who used more avoidant coping strategies experienced greater body dissatisfaction and body dysphoria, and were more likely to believe that their physical appearance influenced their personal worth and sense of self (Cash et al., 2005). In addition, research also warns against using maladaptive behaviours as a form of distraction. Much research has been dedicated to the hypothesis that eating disorder symptoms (e.g., binge eating) may be reinforced because they provide comfort and distraction in response to negative emotions (Thompson & Stice, 2001).

Comparing Self-Compassion and Cognitive Restructuring to Dispositional Coping Strategies

The goal of many psychotherapy approaches is to help clients achieve a balanced approach to coping, whereby patients can engage with difficult experiences without over-identifying with them or ruminating about them (Aldao, Nolen-Hoeksema, & Schweizer, 2010). In this way, self-compassion and cognitive restructuring are cognitive strategies that, theoretically speaking, oppose emotion-oriented or avoidance coping. Both strategies encompass an approach method, whereby they encourage people to confront negative thinking patterns rather than to escape the thoughts and the resulting affect through distraction, suppression, or behaviours that “numb” people to their experiences (e.g., drugs and alcohol). Both self-compassion and cognitive restructuring also aim to promote a nonjudgmental curiosity about negative body image thoughts rather than rumination in the process of reducing avoidance.

In order to best test the effect of cognitive restructuring and self-compassion on body image, a control strategy was employed in the current study. The control strategy is provided to the group of participants that does not receive an “active” (i.e., theoretically thought to be helpful) cognitive strategy in order to help isolate the effect of the active strategies by removing the effect of demand characteristics and confounding biases. In the current study, the aim was to design a control strategy that would, as closely as possible, mimic how individuals typically cope with their negative body-related thoughts. Control strategies used to achieve this same goal in other single-session experimental studies included: a) an unfocused attention task control condition, whereby participants were invited to “simply think about whatever comes to mind... let your mind wander freely without trying to focus on anything in particular” (e.g., Arch & Craske, 2006, pp. 1852); or b) a “think as usual” control task, whereby participants are encouraged to employ a cognitive approach that is typical for them by suggesting that they “continue thinking about this event the way you normally would” (Cassin & Rector, 2011, pp.

269-270). Unfocused attention and the “think as usual” strategy appear to be suitable in eliciting an idiographic “default” thinking strategy for each participant. Yet, these strategies seem to lack external generalizability when applied to body image, specifically, and may actually prompt a ruminative thinking style by leaving people vulnerable to focusing more on their distress. For example, ruminative thinking processes seem likely to follow when people with higher body weight are primed to think negatively about their appearance during an experimental induction and are then asked to “let your mind wander” and to “think about it as you normally would” in a laboratory setting where the tools that may be required to employ other coping approaches may not be available (e.g., distractions, social support). Thus, employing control groups that promote unfocused attention or “think as usual” strategies in the current study may involve knowingly worsening the control group’s body image, rather than imitating how people would typically manage negative body image.

In contrast, distraction serves as a suitable control strategy to employ. In the only two studies to date that have examined default coping approaches in response to negative body image (Cash et al., 2005; Koff & Sangani, 1997), avoidant distraction was the most common strategy for coping with body dissatisfaction among clinical and nonclinical samples. Furthermore, distraction can be taught in a similar training format as cognitive restructuring and self-compassion, thus equating expectancy effects across the strategies taught as much as possible. However, there are numerous considerations for using distraction as a control strategy in the current study was to identify an appropriate distraction task, as empirical investigations have shown that the type of distraction task can significant influence outcomes. For example, one study found that artmaking (drawing a picture that depicted happiness) improves short-term mood, but only for people who use it as a means of distraction rather than for venting their

feelings (Dalebroux, Goldstein, & Winner., 2008). A limitation of the study is that the methodology precludes knowing whether mood improvements were caused by thinking of something positive or by redirecting attention away from negative stimuli. Drake and Winner (2012) conducted a follow-up study to determine whether distracting oneself away from negative thoughts by thinking of something neutral would have the same effect. They determined that distraction through even neutral art-making (i.e., drawing a house) is a more effective means of short-term mood improvement than venting or the allowance of time passing. The benefits of distraction through drawing was consistent when the negative mood induction was general (e.g., viewing a sad movie) as well as personally-relevant (e.g., recalling a personally sad experience). It is also important that the distraction task not promote thought suppression, which has a well-known paradoxical effect as a self-regulation strategy (Wegner, Schenider, Carter, & White, 1987). Thus, in the present study the distraction task was designed to be neutrally valenced and cognitively engaging to minimize opportunity for rumination.

Study Rationale and Aims

The present research study is the first to compare the impact of brief training in cognitive restructuring, self-compassion, and distraction on body image in a community sample of women with higher body weight. The study also sought to examine the cognitive processes (e.g., cognitive distortions, self-compassion, body image flexibility) underlying any changes associated with the short-term practice of these strategies. The existing literature examining the use of cognitive restructuring and self-compassion principles justifies the application of these strategies with this population. Cognitive behavioural therapy is currently considered the more efficacious treatment for disorders in which negative body image is a key symptom (e.g., eating disorders, Body Dysmorphic Disorder), cognitive restructuring has been identified as a common

component among the stand-alone treatments for body image showing the greatest efficacy (Alleva et al., 2015), and the only trial examining CBT as a stand-alone treatment for body dissatisfaction in higher body weight individuals demonstrated promising results (Rosen, Orosan, & Reiter, 1995). The research conducted to date suggests that CBT in general and cognitive restructuring in particular may be helpful for this population, yet the evidence supporting CBT in this context is outdated and has not been well critiqued. In terms of self-compassion, research has demonstrated that individuals with higher trait self-compassion are at a lesser risk of developing poor body image, that day-to-day variation in self-compassion influences body image, and that self-compassion inductions can improve negative body image in individuals with normal weight (Albertson et al., 2014) and in patients with BED (Kelly & Carter, 2015). However, self-compassion has not yet been examined in a non-clinical sample of higher body weight individuals. Thus, the current study aims to test the impact of brief training in cognitive restructuring, self-compassion, and distraction on body image in a sample of women with higher body weight after being weighed.

When comparing psychological treatments, experimental studies can be helpful to evaluate the impact of key components of different therapies. These “micro studies” offer a complimentary approach to randomized controlled trials of broad treatment protocols (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Given that research on self-compassion for body image remains in its early stages and that there has yet to be a self-compassion training protocol developed for the dedicated purpose of improving body image, a full clinical trial of CBT versus compassion-focused training is premature. It first needs to be established whether self-compassion strategies show preliminary usefulness in improving body image in higher body weight individuals in order to justify a larger-scale randomized controlled trial.

In the current study, the effect of distraction was compared to that of brief training in cognitive restructuring and to that of brief training in self-compassion. Participants received one training session focused on cognitive restructuring strategies (CR group), self-compassion strategies (SC group), or distraction strategies (Control group) after being weighed. For the purpose of the current study, participants were weighed on a scale and informed of their weight and body fat percentage prior to learning the strategy, which served to make negative body image thoughts more salient for participants. Stepping on the scale and subsequent comparison with social norms (e.g., BMI charts) is a well-known trigger of body image distress, as even individuals of normal weight report immediate negative effects on mood, self-esteem, and body image following this stressor (Ogden & Evans, 1996). According to Self-Discrepancy Theory, situations that highlight the perceived difference between one's evaluated body image and ideal body, including stepping on the scale, can generate considerable levels of psychological distress (Higgins, Bond, Klein, & Strauman, 1986; Vartanian, 2012). The identification of helpful strategies that buffer this negative reaction to being weighed (or negative body image triggers more generally) could benefit individuals with negative body image who have difficulty controlling their weight or eating behaviours. All participants rated their degree of body satisfaction and dissatisfaction as well as their positive and negative affect at the end of the session (i.e., after receiving training in the assigned strategy), as well as other measures of body image and psychosocial functioning following one week of practice with the strategy.

As reviewed previously, the primary difference between self-compassion and cognitive restructuring in their approach to body image is that CBT encourages clients to identify and change the content of their thoughts to be more realistic and evidence-based, whereas self-compassion-based therapies encourage clients to change their relationship to their thoughts by

noticing and accepting them with compassion. On the basis of this key difference between the two approaches, as well as additional information from the reviewed literature, a number of hypotheses were proposed for the current study.

Research Questions and Hypotheses

The proposed study is designed to answer the following research questions:

1. Immediately following the training session, are there differences in the impact of brief training in cognitive restructuring (CR), self-compassion (SC), and distraction (Control) strategies on:

a) State positive and negative affect;

b) State body satisfaction/dissatisfaction.

If so, which strategy has the greatest impact?

Hypothesis 1a): All three groups will report significant improvements on state affect from pre- to post-training. The SC group is expected to improve to the greatest extent, followed by the CR group, followed by the Control group.

Hypothesis 1b): The CR and SC groups will report significant improvements on state body satisfaction/dissatisfaction from pre- to post-training as compared with the Control group. The SC group is expected to improve to the greatest extent, followed by the CR group, followed by the Control group.

2. One week following the training session, are there differences in the impact of brief training in CR, SC, and distraction (Control) strategies on global body image?

If so, which strategy has the greatest impact?

Hypothesis 2: Global body image is the primary dependent variable of interest. The CR and SC groups will report significant improvements in negative body image from baseline to the 1-

week follow-up as compared with the Control group. Similar to Hypotheses 1a) and 1b), the SC group is expected to improve to the greatest extent, followed by the CR group.

3. One week following the training session, are there differences in the impact of brief training in CR, SC, and distraction (Control) strategies on psychological variables relevant to body image, including:

- a) Self-compassion;
- b) Body-image flexibility;
- c) Body-image cognitive distortions;
- d) Objectified body surveillance;
- e) State self-esteem.

If so, which strategy has the greatest impact?

Hypotheses 3a) and 3b): The CR and SC groups will experience greater improvements in both self-compassion and body image flexibility from baseline to 1-week follow-up as compared with the Control group. The SC group is expected to improve to the greatest extent, followed by the CR group.

Hypothesis 3c): The CR and SC groups will experience decreases in the degree to which they endorse maladaptive body-image cognitive distortions from baseline to 1-week follow-up as compared with the Control group. The CR group is expected to improve to the greatest extent, followed by the SC group.

Hypothesis 3d) and e): The CR and SC groups will report greater improvements on body consciousness and state self-esteem from baseline to 1-week follow-up as compared with the Control group. There is no strong theoretical rationale for any differential effects of CR or SC strategies on either of these measures.

Methods

This study received approval from the Research Ethics Boards at Ryerson University.

Participants

Women who self-identified as having a BMI within the overweight or obese categories and who endorsed negative body image were recruited between August 2016 and August 2017. Recruitment was accomplished through four primary means. First, online postings were placed on advertising websites (such as Kijiji.ca, Craigslist.ca, and Backpage.ca), the Healthy Eating and Lifestyle (HEAL) lab website, and the HEAL lab social media platforms (including Facebook and Twitter). Second, recruitment posters were posted on streets around the Greater Toronto Area. The research team was granted permission to also hang posters inside buildings on Ryerson campus, at some participating coffee shops, and at a psychology private practice in downtown Toronto. Third, staff members of Sheena's Place (non-profit organization in Toronto offering support groups for disordered eating and negative body image) were informed of the study. Interested individuals were instructed to contact the research team at the HEAL Lab at Ryerson University.

The current study investigated adult women (between the ages of 18 and 65 years) who were overweight or obese. There are a number of empirically-supported reasons for focusing on this specific demographic. First, women endorse higher rates of body dissatisfaction than do men and may experience different negative body image triggers (reviewed by Tiggeman, 2004). Thus, for the purposes of this experimental study, participant gender is a potential confound, and only women were recruited. Second, the current study included only individuals who reported high negative body image, defined as exceeding a cutoff score of 52 or above on the Body Shape Questionnaire-16 item version (BSQ-16; Cooper, Taylor, Cooper, & Fairburn, 1986) during the screening process. A meta-analytic review showed that participant samples screened for body

dissatisfaction report larger post-intervention improvements on body image ($d = 0.79$) relative to samples that were not screened and presumably had varying levels of body satisfaction/dissatisfaction ($d = .14$; Alleva et al., 2015). Third, individuals with a BMI equivalent to or above 25 kg/m² (i.e., in the overweight or obese classification for weight status) were included in the current study. The distinction between a BMI in the overweight range versus the obese range appears to be important for specifying medical risks, but is less meaningful with respect to the social and psychological ramifications of excess weight (Schwartz & Brownell, 2004).

The current study aimed to recruit at least 75 participants. A recent pilot RCT on self-compassion for BED identified large effects between three treatment conditions on primary outcome measures with 11 to 12 individuals per group (3 groups, $N = 35$). The current pilot experimental investigation aimed to recruit at least double that number for each of the three conditions (25 participants per group). Furthermore, an a priori power calculation was completed using G*Power software, and found that a sample size of 65 across groups was required to have adequate power (0.80) to detect a significant large interaction effect between time and group on the measure of global body image, the primary dependent variable (Cohen, 1988).

Measures

Please refer to Table 1 below for an overview of the study measures and times of administration.

Table 1***Study Measures and Administration Times***

Measure	Baseline	Pre-weighing	Pre-training*	Post-training	1-week follow-up
<i>Mini International Neuropsychiatric Interview (M.I.N.I.)</i>	√				
<i>Depression Anxiety Stress Scales (DASS-21)</i>	√				
<i>Fears of Self-Compassion Scale (FSCS)</i>	√				
<i>Self-Compassion Scale (SCS)</i>	√				√
<i>State Self-Esteem Scale (SSES)</i>	√				√
<i>Body Shape Questionnaire 16-item (BSQ-16)</i>	√				√
<i>Assessment of Body-Image Cognitive Distortions (ABCD)</i>	√				√
<i>Body Image Acceptance and Action Questionnaire (BI-AAQ)</i>	√				√
<i>Objectified Body Consciousness Scale: Surveillance Scale (OBCS-SS)</i>	√				√
<i>Visual Analogue Scale (VAS) of Body Dissatisfaction</i>		√	√	√	√
<i>Positive and Negative Affect Scale-State Version (PANAS-S)</i>		√	√	√	

* Pre-training measurements occur after participants were weighed (body dissatisfaction induction). The M.I.N.I. was used solely for the purpose of screening participants for inclusion criteria. The BSQ-16 was also used for screening participants for inclusion criteria (a score of at least 52), but was also the primary outcome variable.

Mini International Neuropsychiatric Interview (M.I.N.I.; Sheenan, et al., 1998). The M.I.N.I. is a short structured diagnostic interview for DSM-IV and ICD-10 psychiatric disorders. It was designed to meet the need for a short but accurate structured psychiatric interview. The Suicidality, Bipolar Disorder, and Psychosis sections were used to screen participants for exclusion criteria. The M.I.N.I. was not used as an outcome measure in the current study.

Visual Analogue Scale of Body Satisfaction and Dissatisfaction (VAS; Heinberg & Thompson, 1995). The VAS measured state body satisfaction and dissatisfaction at that moment (Appendix A). Participants were asked to respond to the following question: “On a scale from 0-100%, how do you feel about your body right now?” Participants were asked to mark a rating along a 10-centimeter horizontal axis between two extremes for state body dissatisfaction: 0% (“*no dissatisfaction*”) and 100% (“*extreme dissatisfaction*”), and along a separate axis for state body satisfaction: 0% (“*no satisfaction*”) and 100% (“*extreme satisfaction*”). Responses were converted to scores ranging from 0% to 100% by measuring to the nearest millimeter. The VAS has been shown to be significantly correlated with the Body Dissatisfaction Subscale of the Eating Disorders Inventory (EDI-BD; Garner, Olmsted, & Polivy, 1983) among college women ($r = .76$), suggesting evidence of construct validity. The VAS was selected as the pre- to post-session measure of state body image as its items do not require day-to-day experience to respond to.

Positive and Negative Affect Scale - State Version (PANAS-S; Watson, Clark, & Tellegen, 1998). The PANAS-S was used to assess state positive and negative affect (Appendix B). For the purposes of the current study, the PANAS-S was slightly adapted to be relevant to body image. The PANAS-S is a 20-item self-report measure in which participants rate the extent to which they are feeling various positive emotions (e.g., inspired, strong, confident) and

negative emotions (e.g., guilty, disgusted, scared) *about their body or appearance* at present. Ten items pertain to negative emotions and another ten relate to the positive emotions. Participants responded on a 5-point Likert scale ranging from 1 (“*very slightly*” or “*not at all*”) to 5 (“*extremely*”). Scores for negative or positive affect range from 10 to 50. The discriminant validity between the positive and negative affect subscales has been demonstrated (Watson, Clark, & Tellegen, 1998). In the current study, internal consistency reliability was very high for both positive affect ($\alpha = 1.00$) and negative affect ($\alpha = .99$).

Body Shape Questionnaire-16 (BSQ-16; Cooper, Tayloer, Cooper, & Fairburn, 1987). The original BSQ consists of 34 self-report items assessing body shape concerns, especially the subjective component of body image, which includes the cognitions and affective responses associated with negative body image. This measure was used to screen individuals for body dissatisfaction, and was also the primary outcome of interest. For the purposes of the current study, the shortened 16-item version of the scale was employed (Evans & Dolan, 1993; Appendix C). Sample items include “Have you worried about other people seeing rolls of fat around your waist or stomach?”, “Have you been so worried about your shape that you have been feeling you ought to diet?”, and “Has feeling full (e.g. after eating a large meal) made you feel fat?”. Participants are asked to respond to each item on a scale ranging from 1 (“*Never*”) to 6 (“*Always*”). Items are averaged to obtain a mean, with higher scores representing greater body dissatisfaction. Internal consistency reliability of the BSQ-16 in the current study was strong ($\alpha = .92$). Similar to the VAS, the BSQ-16 is considered a measure of state body image (Cash & Smolak, 2012); however, it was not administered immediately following the session in the current study because items require lived experiences in order to change. Immediately after the

session, participants would not have had the chance to perform activities and to see if they feel differently about their bodies during those activities.

Objectified Body Consciousness Scale – Surveillance Scale (OBCS-SS; McKinley & Hyde, 1996). The OBCS was developed and validated to assess objectified body consciousness, or the perspective that the feminine body is constructed as an object to be looked at (Appendix D). The Surveillance Subscale measures participants' habitual body monitoring, and consists of 8 items such as "I rarely worry about how I look to other people". Items are rated on a Likert scale from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). A total score is obtained by taking the average of the items, and higher scores represent higher body consciousness and surveillance. Total scores range from 8 to 56, with higher scores reflecting a greater degree of body surveillance. In the current sample, the Surveillance subscale of the OBCS had acceptable internal consistency ($\alpha = .70$).

Assessment of Body Image Cognitive Distortions (ABCD; Jakatdar, Cash, & Engle, 2006). The ABCD is a revised version of the Body Image Cognitive Distortions Questionnaire (*BCDQ*; Cash, Muth, Williams, & Rieves, 1996) that consists of 18 items used to assess cognitive distortions related to body image across a variety of situations. The ABCD assesses eight distortions from Cash's (2012) *Body Image Workbook*. Five items are used to assess each distortion, and participants are asked to rate each item on a 5-point scale ranging from 0 ("*not at all like me*") to 4 ("*exactly like me*"). Sample items include: "Imagine that you leave for work or school one morning feeling that you don't look quite as good as you usually do. Would you think, 'I really look terrible today'?" and "Imagine that you're invited to a party on the beach. Would you think that because of something about your appearance you probably won't fit in or enjoy participating?". Scores on the ABCD range from 0 to 72, with higher scores reflecting a

greater endorsement of cognitive distortions pertaining to body image. The internal consistency of this scale in the current study was high ($\alpha = .90$). This measure is protected by copyright, and is therefore not included in the appendices.

Body Image Acceptance and Action Questionnaire (BI-AAQ; Sandoz & Wilson, 2009). The BI-AAQ is comprised of 12 self-report items that assess body image (in)flexibility: the degree to which an individual can tolerate and experience challenging body related experiences without impairment, and the extent to which an individual actively connects to perceptions, thoughts, beliefs, and feelings related to appearance without directly attempting to change their intensity, frequency, or content (Appendix E). The 12-item version is a shortened form of the original 29-item BI-AAQ. The shortened version was developed as a result of research showing that 12 of the 29 items had factor loadings above .60 (Sandoz et al., 2013). Research has supported the stability of the one-factor structure, which accounted for 54% of the variance (Sandoz et al., 2013). Sample items include: “I will have better control over my life if I can control my negative thoughts about my body” and “To control my life, I need to control my weight”. Participants are asked to rate each item on a 7-point Likert scale ranging from 1 (“*never true*”) to 7 (“*always true*”). Scores range from 12 to 84, with higher scores reflecting a greater degree of body image acceptance and flexibility. The internal consistency of this scale in the current study was high ($\alpha = .90$).

Self-Compassion Scale (SCS; Neff, 2003b). The SCS consists of 26 self-report items designed to measure six elements of self-compassion (Appendix F). These six subscales include: self-kindness (e.g., “I try to be loving towards myself when I am feeling emotional pain”), self-judgment (e.g., “I am disapproving and judgmental about my own flaws and inadequacies”), common humanity (e.g., “When things are going badly for me, I see the difficulties as part of life

that everyone goes through”), isolation (e.g., “When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world”), mindfulness (e.g., “When I am feeling down I try to approach my feelings with curiosity and openness”), and overidentification (e.g., “When I am feeling down I tend to obsess and fixate on everything that is wrong”). Items are rated on a 5-point Likert scale ranging from 1 (“*almost never*”) to 5 (“*almost always*”), with higher scores reflecting greater self-compassion. The subscales of the SCS may be examined separately, or a total self-compassion score can be calculated. Total SCS scores range from 26 to 130, with higher scores reflecting a greater degree of self-compassion. The internal consistency of the scale in the current sample was good ($\alpha = .88$).

Fears of Compassion Scale – Self-Compassion Subscale (FCS; Gilbert, McEwan, Matos, & Ravis, 2011). The FCS is a three-subscale measure that assesses fears related to giving and receiving compassion (Appendix G). In the current study, only the 15-item subscale assessing fear of self-compassion was administered. This measure was included in the current study to allow for the assessment of fear of self-compassion as a potential covariate. Sample items include: “I feel that I don’t deserve to be kind and forgiving to myself” and “I fear that if I develop compassion for myself, I will become someone I do not want to be”. This scale demonstrated strong internal consistency in the current sample ($\alpha = .93$).

State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991). The State Self-Esteem Scale is a 20-item scale that assesses self-esteem at that moment (Appendix H). The measure has three subscales that represent the three components of self-esteem: 1) performance self-esteem, 2) social self-esteem, and 3) appearance self-esteem. Participants are instructed to read statements (e.g., “I feel confident about my abilities”) and to rate how strongly they identify with each one on a scale from 1 (“*not at all*”) to 5 (“*extremely*”). The subscales may be examined

separately, or a total score can be calculated. The internal consistency of the scale in the current sample was good ($\alpha = .86$).

Depression Anxiety Stress Scales, 21 item version, Depression Subscale (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 is a 21-item self-report measure that assesses depression, anxiety, and stress (see Appendix I). The Depression subscale of the DASS-21 was administered for the purposes of examining group differences at baseline to determine if depression should be a covariate. The Depression subscale is comprised of 7 items assessing dysphoria, anhedonia, loss of motivation and enjoyment, and hopelessness. Participants are required to indicate how much each item applied to them over the past 7 days on a scale ranging from 0 (“*did not apply to me at all*”) to 3 (“*applied most of the time*”). In the current study, Cronbach’s alpha for the Depression Subscale score of the DASS-21 score was strong ($\alpha = .91$).

Demographic variables. Participants were asked to respond to demographic questions regarding their age, marital status, ethnicity, level of education, employment status, and occupation. They were also asked their self-reported weight and height to calculate self-reported BMI. Their self-reported weight was compared with their objective weight according to the scale when weighed during the training session.

Evaluation of Strategy. At the 1-week follow-up assessment, participants were asked to rate the degree to which the strategy rationale was credible, how well they thought it would work, and the degree to which they attempted to follow the instructions provided from the strategy training session (Appendix J). Responses were made on a 5-point Likert scale ranging from 0 (“*not at all*”) to 4 (“*extremely*”).

Procedure

Please refer to Table 1 for an overview of the study measures and times of administration.

Phone Screen. Potential participants initiated contact with the researcher (L. David), who provided information regarding the study protocol and assessed eligibility via telephone (Appendix K). Inclusion criteria were as follows: 1) Female; 2) Aged 18 to 65 years; 3) Body Mass Index ($\text{BMI} = \text{kg}/\text{m}^2$) $> 25 \text{ kg}/\text{m}^2$; 4) Body Shape Questionnaire (16 item short-form) score ≥ 52 , indicating at least moderate body dissatisfaction; 5) Fluent in English; 6) Able to attend a one-hour appointment at Ryerson University; and 7) Access to a computer with Internet access. Participants were asked if they perceived themselves to be at least overweight or to have a BMI of at least $25 \text{ kg}/\text{m}^2$ during the phone screen but were not required to confirm their weight prior to attending the session. No participant fell below the BMI cutoff. All individuals who met these inclusion criteria were eligible for participation with the exception of people with a current severe psychiatric issue (e.g., active suicidal ideation, active psychotic or manic symptoms), as determined by screening questions on a frequently used structured diagnostic interview (Mini International Neuropsychiatric Interview; Sheehan, 1998). The researcher discussed the study consent form to eligible participants (Appendix L) over the phone and prospective participants had the opportunity to ask questions. Individuals who chose to participate provided verbal informed consent after hearing a detailed overview of the study. They were also informed that the scheduling email they received included a copy of the consent form to read before responding to the questionnaire or attending the session.

Baseline Assessment. Eligible and consenting participants were emailed a link to the questionnaire package for the baseline assessment. The questionnaire package was hosted on *Qualtrics*, an online survey platform (Qualtrics, Provo, UT). Prior to completing any questionnaires, participants were prompted to read an online version of the study's consent form and indicate that they agree to partake in the study before responding. The questionnaire package

consisted of a demographic questionnaire, as well as several measures of self-compassion, eating behaviours, psychosocial functioning (e.g., depression, anxiety), and cognitive, behavioural, and emotional components of body image (see *Measures* section above and Table 1 for further details). Participants inputted their individual study code into the survey to maintain confidentiality.

Randomization. Participants who completed the baseline questionnaire packet were randomly assigned to one of three groups: 1) Cognitive Restructuring (CR Group); 2) Self-Compassion (SC Group); or 3) Distraction (Control Group). Randomization was conducted using a web-based random number generator. The random number assignments were kept in sealed envelopes in the lab. The results of the randomization were only viewed after the participants completed their pre-training questionnaires in the session in order to eliminate any influence group assignment may have had on reporting for these questionnaires or the study therapist's treatment toward the participant prior to the training session.

Study Visit and Post-Training Assessment. Participants were scheduled to attend an appointment at the HEAL Lab at Ryerson within one week of completing the baseline questionnaires. Upon arrival at the HEAL Lab, participants reviewed and signed a written informed consent form and completed the VAS. They were then weighed by the researcher on a scale that measures overall weight, as well as the percentage of weight that comes from fat versus muscle, bone, and water. Respectful and ethical weighing practices were employed, whereby the weighing was done with the participants' consent and took place in a private office. The experimenter informed the participant of their weight and body fat percentage and recorded the numbers on a piece of paper on a clipboard. The purpose of weighing participants was two-fold: 1) to ensure participants meet the BMI criteria for inclusion in the study, and 2) to make

body weight salient, given that the purpose of the strategy training (self-compassion and cognitive restructuring) is to improve body dissatisfaction, and thus, body concerns should be activated while learning the skills. After being weighed, participants re-rated their degree of body dissatisfaction on a Visual Analogue Scale (VAS) and their affect using the Positive and Negative Affect Schedule – State Version (PANAS-S). The VAS was provided both pre- and post-weighing as part of the manipulation check, to see if body image did worsen after being weighed. Participants then received training in the assigned strategy (described below) for 50 minutes. Immediately after the strategy training, participants re-rated both the VAS and PANAS-S to examine the immediate impact of the training. Participants were asked to use the strategy daily over the next week. Participants were compensated \$25.00 total for their full participation. Remuneration included \$15.00 for their time in attending the training session and \$10.00 for their continued practice of the strategy over the course of the week and completion of the final questionnaire packet.

Follow-up Assessment. All participants completed the follow-up questionnaire packet one week following the training session. The follow-up questionnaire packet was similar to the baseline packet, with the exception of the exclusion of the FSC and DASS-21. This questionnaire packet was designed to assess group differences one week following the training session, to assess the durability of any improvements that might occur with continued practice. An electronic link to the online questionnaire packet was sent out one week after the training session as per the follow-up timeline. If participants did not respond within four days, a reminder email was sent out every two to three days thereafter. Phone calls were made to participants who did not respond to four reminder emails. Questionnaires that were not completed within two weeks of the link being sent out were not used in the current study.

Study Completion. At the 1-week follow-up, the debriefing form was sent by email. The \$10.00 compensation for individuals who had completed the follow-up questionnaire was sent by mail with the participants' consent.

Strategy Training Groups

For the purposes of the current experimental study, a strategy training approach was used. The cognitive restructuring, self-compassion, and distraction strategies are all amenable to this paradigm. Cognitive restructuring was chosen as the CBT-related skill, in response to research showing that CBT with an emphasis on exposure or cognitive components demonstrated equivalent and substantial improvements in body dissatisfaction (Jarry & Berardi, 2004). Furthermore, a single session of cognitive restructuring has been adapted to be used successfully as a skills training intervention for psychiatric distress (e.g., Shikantani, Antony, Kuo, & Cassin, 2014). With respect to self-compassion, despite mindful meditation being an integral component of the MSC program, self-compassion can develop through the use of specific self-compassion skills in isolation and irrespective of extent of meditative practice (Neff et al., 2007). According to Neff and Germer (2012), the developers of MSC, the self-compassion program was designed to be a skills-based intervention rather than a cohesive group therapy package.

The training was conducted by a PhD student in Clinical Psychology (L. David). She has clinical and research experience in the area of psychosocial interventions for body image and disordered eating. She has accrued extensive training in cognitive restructuring and has received additional training in self-compassion, including attendance at the *Self-Compassion and Emotional Resilience* workshop held by self-compassion pioneer, Dr. Kristin Neff. The HEAL Lab Director, Dr. Stephanie Cassin, is a Registered Clinical Psychologist and met regularly with Ms. David for supervision. Participants were made aware that they could contact Dr. Cassin to

discuss issues that were brought up during the study; however, she was not contacted for any such purpose throughout the duration of the study.

Cognitive-Restructuring. The full strategy training script is reproduced in Appendix M. Participants who received training in the Cognitive Restructuring strategy (CR group) were first provided with psychoeducation about the cognitive behavioural model of body image, which highlights the factors, including the role of automatic thoughts, that maintain body image concerns. Next, the concept of negative automatic thoughts (which Cash terms “private body talk”) and cognitive distortions was introduced in the same manner as it is presented in Steps 4 and 5 of *The Body Image Workbook* (Cash, 2012). In developing this cognitive restructuring training module, it was important that the information be relevant to the majority of participants and accessible to learn within one hour. The three steps that preceded cognitive restructuring in *The Body Image Workbook* were focused on understanding body image, the idiographic origins of body image narrative, and a mindful acceptance of body image experiences. These steps were lengthy and required a lot of personal reflection. Furthermore, these steps are not deemed as prerequisites to the cognitive restructuring section. Thus, they were not included in the training session. Eight cognitive distortions pertinent to body image (from the *Body Image Workbook*; Cash, 2012) were presented. Examples include: 1) *Beauty-or-Beast*: dichotomous thinking regarding appearance; 2) *Unfair-to-Compare*: biased comparisons with one’s own ideal, media images, and actual people; 3) *Magnifying Glass*: selective attention placed on a disliked feature of appearance; 4) *Blame Game*: drawing conclusions that some aspect of one’s appearance is the cause of past injustices in life; 5) *Mind Misreading*: projecting one’s negative body image thoughts into somebody else’s presumed thoughts; 6) *Misfortune Telling*: predicting that one’s appearance will adversely affect the future; 7) *Beauty Bound*: concluding that one cannot do

certain things because of one's looks; 8) *Moody Mirror*: having one's negative mood state generalize to feelings about one's appearance. Participants had the opportunity to explore the personal relevance of the CBT model and cognitive distortions.

Participants were subsequently asked to complete a "*Talking Back to My Cognitive Distortions*" worksheet, which was also used as the primary cognitive restructuring worksheet in *The Body Image Workbook* (Cash, 2012), with assistance from the study therapist. The worksheet focuses on identifying negative "private body talk" and probable cognitive distortions, and subsequently developing coping statements to challenge and "talk back" to the negative body image thoughts. For continued practice, participants were asked to complete this worksheet daily for the next week, which required them to notice body image cognitive distortions, label them as such, and use coping statements to challenge the negative thoughts.

Self-Compassion. The full strategy training script is reproduced in Appendix N. There is currently no structured self-compassion training protocol outside of the 8-week MSC program. Previous research that has aimed to assess the effect of briefer self-compassion interventions has had to develop alternative "interventions", ranging from verbal prompts that include normalizing and validating experiences in order to induce self-compassion in the moment (e.g., Adams & Leary, 2007) to regular self-compassion meditation schedules pieced together using Dr. Neff's website resource. Given that brief self-compassion training interventions had not yet been developed for body image, the primary investigator (L. David) developed one for the purposes of the current study. This brief self-compassion training was designed to be skills-based and focused on body image experiences. It was informed by the work of Dr. Neff (both published articles and in-person workshops) on self-compassion (e.g., Neff, 2013; Neff, 2016) as well as the literature on the underlying mechanisms that maintain negative body image.

Participants receiving training in the SC group first received psychoeducation on self-compassion followed by an exercise whereby they identify a “soothing touch” behaviour (e.g., placing the hand on the heart) that is designed to promote a nurturing approach towards oneself through the release of oxytocin. They then took part in a writing task that has been successfully used to induce self-compassion (e.g., Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006; Gilbert & Irons, 2004). The exercise entitled, “*Exploring self-compassion through writing*” was developed by Dr. Neff (www.self-compassion.org) and involves first exploring self-critical thoughts, and then being invited to write a letter to themselves from the perspective of an unconditionally loving and accepting friend. This exercise was adapted to focus on body image, whereby participants were encouraged to explore, in a non-judgmental way, critical thoughts about body weight concerns or the body imperfections that make them feel inadequate. More specifically, participants were encouraged to write down the self-critical voices they experience when they think about this physical quality, as well as the emotions that come up when they think about this aspect of themselves. In the process of writing the letter from an imaginary friend, they were instructed to reflect upon what this friend feels towards them, and what this friend would say to them about this appearance “flaw” from the perspective of unlimited compassion.

Next, participants were asked to see if they were able to explore the intention or goal of the critical voice, and to thank this voice for what it was attempting to accomplish by being judgmental and harsh. With that, they were invited to think about how they could ask this critical voice to make more room for more wise, compassionate words to become present. The practice of exploring the underlying intentions of one’s critical voice was not explicitly mentioned in the description of the exercise on Dr. Neff’s webpage, but was encouraged in her workshop on *Self-Compassion and Emotional Resilience* (Neff, 2016). For continued practice, participants were

asked to complete a daily self-compassion journal for the next week, where they were instructed to write out both the critical and compassionate voices they experienced on a daily basis. The journal was interval contingent, as they were asked to complete it every day, regardless of the stressors they encountered.

Distraction (Control). Participants in the Control group received training in distraction techniques. They were asked to complete a mundane writing task in a separate room for the same length of time as the other groups participated in skills training (approximately 45 minutes) (Appendix O). They were told that the research study was examining whether taking a relaxing break and completing a writing exercise affects body image. The task included having the participants write, in great detail, about their typical daily activities. As is typically done in similar experimental studies, participants were asked not to use their mobile phones or read magazines during this period, as both of these activities could impact body image and/or affect. The act of sitting in a room with no distractions has little external validity to the real world, and may induce rumination about body dissatisfaction or promote alternative cognitive patterns. The writing task was used because the two active groups were completing writing exercises and worksheets. This control group design equated the expectancies of participants across all three groups, such that any group differences observed are more likely to be due to the strategy rather than other confounding variables.

Results

Randomization and Attrition

Participant flow can be seen in Figure 1 below.

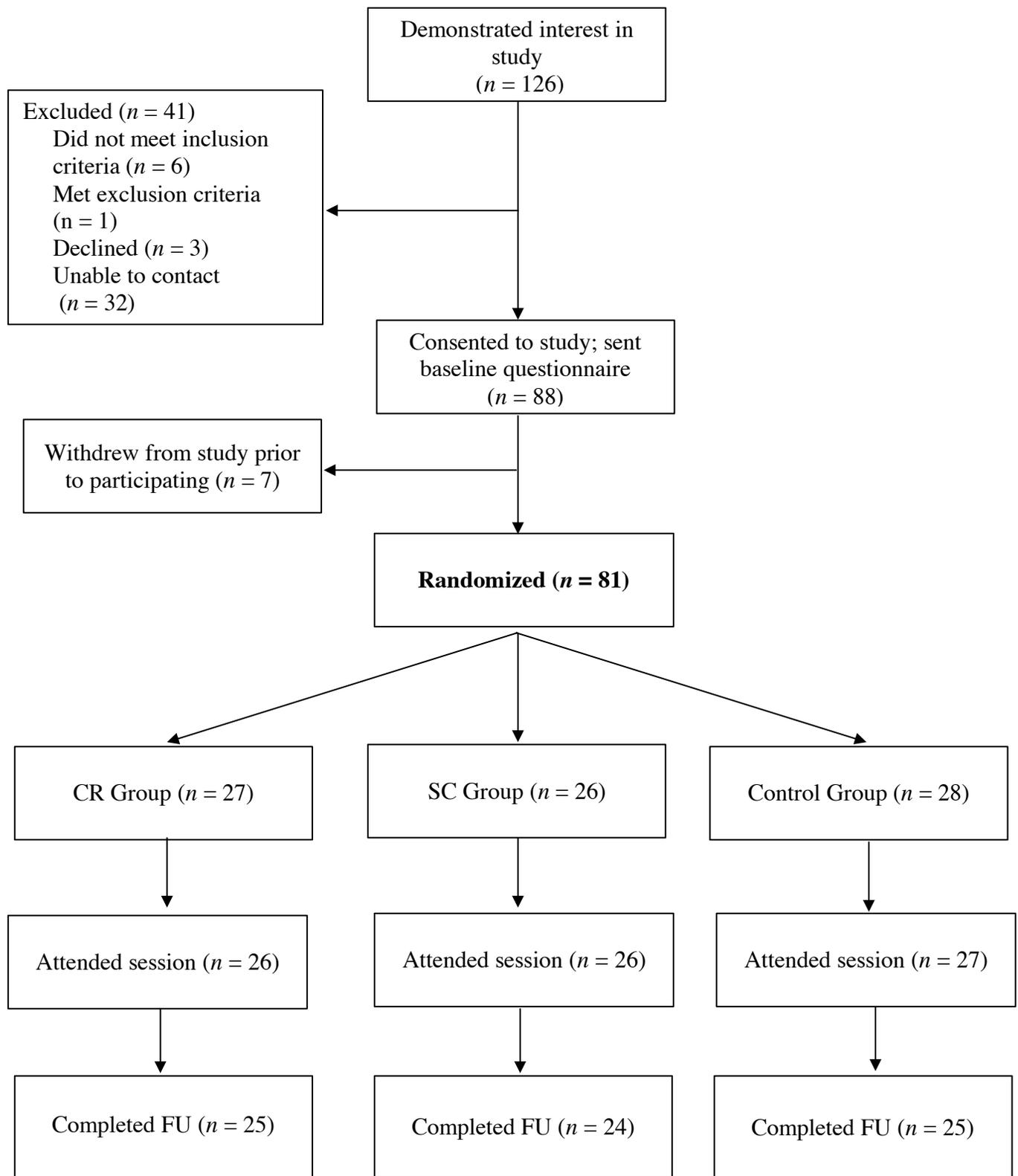


Figure 1. Summary of participant flow.

The current study recruited participants over a 12-month period, from August 2016 to August 2017. In total, 129 participants were recruited, of whom 59.7% responded to online postings, 18.6% responded to posters, 3.1% were recruited through word of mouth and 2.3% were recruited through Sheena's Place. Approximately 6.2% percent of individuals could not recall where they learned about the study, and 10.3% of people did not indicate where they learned about the study in their initial contact and the researcher was unable to contact them. Of the 129 individuals who expressed interest in participating, the researcher was unable to get into contact with 32 people (24.8%). Of the remaining 88 individuals, six people did not meet inclusion criteria for the study based on the phone screening. This included three individuals who were not eligible based on low BSQ-16 scores, two individuals who were not eligible based on low BMI, and one individual who was not eligible given current severe psychiatric symptoms. After learning more about the study, three people declined participation due to the time commitment or insufficient compensation. Overall, 88 people were invited to take part and consented to participate in the study; of these, seven participants who consented did not complete the baseline questionnaire packet and two individuals did not show up for their scheduled session. Participants were not told which group they were assigned to until they attended the session and had completed their questionnaires. This was done in order to avoid the influence of group assignment on session attendance.

Overall, 79 participants attended their scheduled training session and were randomized to a strategy, and 74 participants completed the 1-week follow-up. Chi-square tests were conducted to compare study completers and non-completers. Attrition was not related to group assignment, $\chi^2 = .37, p = .83$. Across groups, the participants who completed the follow-up ($n = 74$) did not differ from those that did not ($n = 5$) on any demographic variables or baseline level of outcome

variables, suggesting no differential attrition ($ps < .05$). Post-hoc power analyses were conducted using G*Power software to establish the degree of power obtained with this sample size. The power analyses indicated that in evaluating the immediate pre-post changes in primary outcomes (within-subjects, $n = 79$), there was a power level of .99 to identify a medium effect size ($d = 0.50$). The mixed model analyses ($n = 74$; 3 groups) obtained a power of .97 to find an interaction (within-between subjects, $n = 74$) with a moderate effect size and a power of .95 to identify a main effect for group (between-subjects, $n = 74$).

The analyses of the pre- to post-training data were based on the 79 participants who attended the training sessions, and the analyses of the pre-training to 1-week follow-up data included only the 74 participants who completed the follow-up questionnaires. The matching randomized assignment strategy placed participants into the CR, SC, and Control groups at a 1:1:1 ratio. Despite the randomization of participants into groups, the presence of pre-existing differences between participants in the CR, SC, and Control groups was examined. ANOVAs were conducted to compare the groups on demographic variables (e.g., age, BMI) and baseline characteristics (e.g., depression, anxiety, stress, body image, and self-compassion). As Table 2 shows, the groups did not differ with respect to any of the demographic variables or on any of the baseline clinical characteristics.

Table 2***Comparison of Groups on Demographic and Clinical Variables at Baseline***

Variable	CR (n = 26)	SC (n = 26)	Control (n = 27)	F(2,77)
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	
Age	34.00 (12.5)	37.62 (12.1)	35.79 (13.8)	0.62
Body Mass Index	35.68 (7.5)	31.99 (4.6)	33.91 (6.6)	1.81
BSQ-16	71.33 (10.9)	69.70 (9.9)	72.00 (10.3)	0.29
DASS-21				
Depression	7.37 (5.8)	7.30 (5.5)	8.36 (4.9)	0.24
Anxiety	5.00 (4.2)	5.18 (4.6)	7.23 (4.8)	1.55
Stress	8.67 (4.6)	8.61 (5.6)	10.68 (4.5)	1.15
Self-Compassion	2.49 (0.63)	2.62 (0.55)	2.55 (0.57)	0.27
Fear of Self-Compassion	1.32 (0.86)	1.36 (1.00)	1.60 (0.87)	0.64
Self-Esteem	51.21 (11.2)	56.39 (10.5)	48.18 (11.7)	2.94
ABCD	2.58 (0.79)	2.43 (0.69)	2.62 (0.78)	0.43
OBCS-SS	5.46 (0.75)	5.51 (0.87)	5.28 (0.84)	0.46
BI-AAQ	40.83 (14.96)	39.83 (11.77)	40.52 (16.74)	0.04

Note. Multivariate ANOVAs compared groups on demographic variables and on clinical variables at baseline. The three groups did not differ significantly on any demographic or study variables at baseline. CR = Cognitive Restructuring; SC = Self-Compassion; BSQ-16 = Body Shape Questionnaire-16; DASS = Depression Anxiety and Stress Scale; ABCD = Assessment of Body Cognitive Distortions; OBCS-SS = Objected Body Consciousness Scale – Surveillance Subscale; BI-AAQ = Body Image Action and Acceptance Questionnaire.

* $p < .05$

Participant Characteristics

Participants ranged in age from 18 to 64 years ($M = 35.8$ years; $SD = 12.8$). They had a mean weight of 201.2 pounds ($SD = 48.6$), a mean body fat percentage of 41.4% ($SD = 5.8$), and a mean BMI of 33.9 kg/m² (Class I Obesity) ($SD = 6.7$). The final sample consisted of a culturally diverse group of females, with the breakdown of self-identified ethnicity as follows: Caucasian ($n = 25$; 31.6%), African American ($n = 14$; 17.7%), Asian ($n = 15$; 19.0%), Spanish ($n = 6$; 7.6%), Portuguese ($n = 2$; 2.5%), Native American ($n = 2$; 2.5%), Middle Eastern ($n = 2$; 2.5%), Caribbean ($n = 2$; 2.5%), West Indian ($n = 1$; 1.3%), Russian ($n = 1$; 1.3%), Creole ($n = 1$; 1.3%), and Other ($n = 8$; 10%). With respect to marital status, 55.7% of participants ($n = 44$) were single, 12.7% ($n = 10$) were married or common law, 11.4% ($n = 9$) were divorced, 6.3% ($n = 5$) were in a domestic partnership, 2.5% ($n = 2$) were separated, and 2.5% ($n = 2$) were widowed. Of the 8.9% of participations ($n = 7$) that responded “Other” in this category, all of them indicated they were in a monogamous/long-term/committed relationship. Given monogamous relationship was not a given option on the list, there may have been individuals in committed relationships who reported being “single” on this item. There correlation between BMI and negative body image at baseline was nearly zero ($r = -0.90$, $p = .457$), lending additional support to other research showing a weak association between weight and body image once weight exceeds a certain threshold (e.g., overweight) (Latner & Wilson, 2012; Sarwer & Thompson, 2002).

Body Dissatisfaction Induction

To ensure that the weighing induced negative body image, the data were examined to determine whether there was a significant shift in body dissatisfaction and satisfaction from pre-weighing to post-weighing. Indeed, the mean ratings of dissatisfaction significantly increased

from 67.03 to 71.22 ($t = -2.89, p < .01$) and the ratings of satisfaction decreased from 31.33 to 27.49 ($t = 2.80, p < .01$). Approximately 53.1% of participants ($n = 42$) reported that their actual weight was what they expected, while 31.6% ($n = 25$) said it was higher and 11.4% ($n = 9$) said it was lower than what they anticipated. Three participants were unable to or chose not to estimate their weight before getting on the scale. For those that found their weight was lower than what they expected, the degree to which their actual weight differed from their expected weight ranged from 3 to 35 pounds, with a mean of 12 pounds. It is important to consider that, for those that felt they lost weight, negative body image may not have been as salient. For these individuals, there was no change from pre- to post-weighing in body dissatisfaction ($MD = 1.02, SE = 3.1, t(8) = .26, p = .802$), or body satisfaction ($MD = 0.32, SE = 3.5, t(8) = 0.09, p = .931$). This finding suggests that feedback about actual weight did not improve body image, and likely made body image more salient prior to learning the strategy.

Preliminary Analyses

The dependent variables were assessed for the presence of outliers, which were defined as z-score values greater than an absolute value of 3.29, which corresponds to the most extreme 0.10% of scores (Tabachnick & Fidell, 2007). Through running descriptive statistics on the z-scores for these variables, no data points were classified as outliers. The main variables of interest were assessed for normality by examining skewness and kurtosis values. The current study employed indices for acceptable limits of up to ± 2 (Field, 2000 & 2009; Gravetter & Wallnau, 2014; Trochim & Donnelly, 2006). Based on these values, it was found that all variables approximated a normal distribution. Given the limited amount of missing data in this study, missing data were addressed using a single imputation with the mean. This process involves calculating the mean score for the scale based on the available data and substituting the

missing variable for the mean. For individuals that did not completed follow-up ($N = 5$), their pre- to post-session data was used (with their consent), but they were excluded from the follow-up analyses.

A one-way analysis of variance (ANOVA) indicated that there were no significant differences on the DASS-21 Depression subscale scores across the CR group ($M = 7.36, SD = 5.8$), SC group ($M = 7.26, SD = 5.5$), and Control group ($M = 8.00, SD = 4.9$), $F(1, 76) = 0.15, p = .863$. A one-way ANOVA also showed that there were no significant differences on the FSC scale across the CR group ($M = 19.16, SD = 13.1$), SC group ($M = 19.76, SD = 15.1$), and Control group ($M = 22.64, SD = 12.5$), $F(1, 76) = 0.50, p = .606$. Thus, depressive symptoms and the fear of self-compassion were not used as covariates in subsequent analyses (Tabachnik & Fidell, 2007).

Body Mass Index. Post-hoc calculations were completed to examine any differential effects of the strategies across BMI categories. Pearson correlation tests were run between BMI and all dependent variables to identify any significant relationships. The correlation between BMI and the follow-up BSQ-16 scores was not significant ($r = -0.21, p = 0.85$), and thus it was concluded that weight status did not play a significant role in the findings. Independent samples t-tests also showed that there were no differential outcomes for body image, as assessed by the BSQ-16, based on the presence of obesity ($BMI > 30 \text{ kg/m}^2$) ($MD = -5.31, SE = 5.42$) $t(72) = 1.37, p = .178$, or the presence of extreme obesity ($BMI > 40 \text{ kg/m}^2$) ($MD = -6.79, SE = 4.79$), $t(72) = -0.92, p = .369$.

Impact of Strategies from Pre- to Post-Training

To assess the effects of the strategies on state body satisfaction/dissatisfaction and affect from before the training session (after being weighed) to immediately after the training session, 3

(Group: CR vs. SC vs. Control) by 2 (Time: Pre-training vs. Post-training) mixed model ANOVAs were used to compare participants' scores on the VAS of body satisfaction/dissatisfaction as well as the PANAS-S. ANOVAs were chosen to conduct statistical analyses instead of multivariate analyses of variance (MANOVAs), as the dependent variables were found to be highly correlated (Pearson's r between dependent variables ranged from 0.38 to 0.91, $ps < 0.01$). Omnibus interactions that were found to be significant from the mixed model ANOVAs were investigated further with pairwise comparisons. Any significant main effects were followed up using appropriate t-test analyses. Main effects for time were further studied using paired sample t-tests to examine changes within each group from pre- to post-training. Main effects for group were explored with the use of post-hoc independent samples t-tests to test between-group differences at the various time points. Effect sizes were computed from the t-tests (Thalheimer & Cook, 2002). Effect sizes for analyses of variance (ANOVAs) are reported as partial eta-squared, for which values of 0.01, 0.06, and 0.14 are considered to reflect small, medium, and large effects, respectively (Cohen, 1988). Cohen's d is presented for t-tests (small effect = 0.20, medium effect = 0.50, large effect = 0.80; Cohen, 1988). Since the analyses were planned a priori, Bonferroni corrections were not applied in order to decrease the risk of Type II error (e.g., Perneger, 1998; Rothman, 1990). Results are presented in Table 3 below.

Table 3***Changes to State Body Image and Affect Immediately Following the Training Session***

Variable	Pre-Training	Post-Training	<i>t</i> value	<i>ES</i> (<i>d</i>)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
VAS Dissatisfaction (0-100)				
CR Group	73.38 (20.5)	54.58 (16.8)	4.23***	0.85
SC Group	70.20 (20.3)	61.10 (24.6)	2.02	0.40
Control Group	67.67 (18.8)	53.57 (21.5)	3.85***	0.76
VAS Satisfaction (0-100)				
CR Group	25.21 (20.1)	40.32 (17.4)	-3.88***	0.79
SC Group	32.04 (23.2)	44.23 (24.3)	-3.73***	0.74
Control Group	27.55 (17.6)	46.43 (20.2)	-5.44***	1.07
PANAS Negative Affect				
CR Group	29.80 (10.2)	18.8 (6.2)	5.75***	1.15
SC Group	26.54 (9.6)	21.04 (11.3)	3.38**	0.69
Control Group	26.20 (9.8)	22.25 (9.9)	3.11**	0.61
PANAS Positive Affect				
CR Group	19.80 (7.1)	28.92 (8.5)	-5.75 ***	1.15
SC Group	22.58 (7.5)	28.54 (9.3)	-4.70***	0.96
Control Group	18.79 (6.6)	24.30 (10.9)	-3.64***	0.71

Note. Paired-samples *t*-tests compared responses on measures of state body image and affect (*n*

= 26 for the CR and SC groups, *n* = 27 for the Control group) before and after the training session. The *df* for the *t*-tests in the CR and SC groups is 25, and the *df* for the Control group is 26. *ES* = effect size (.2 = small effect, .5 = medium effect, .8 = large effect; Cohen, 1992).

Cohen's *d* (*d*) was used as the measure of effect size. Effect sizes were computed from the *t*-tests (Thalheimer & Cook, 2002). CR = Cognitive Restructuring; SC = Self-Compassion; *df* = degrees of freedom; PANAS = Positive and Negative Affect Scale; VAS = Visual Analogue Scale.

* *p* < .05; ** *p* < .01; *** *p* < .001.

Hypothesis 1a: State Positive and Negative Affect

When examining group differences on negative affect scores from the PANAS-S, the group by time interaction was significant, $F(1, 71) = 5.28, p = .007, \eta^2_p = .128$ (Figure 2).

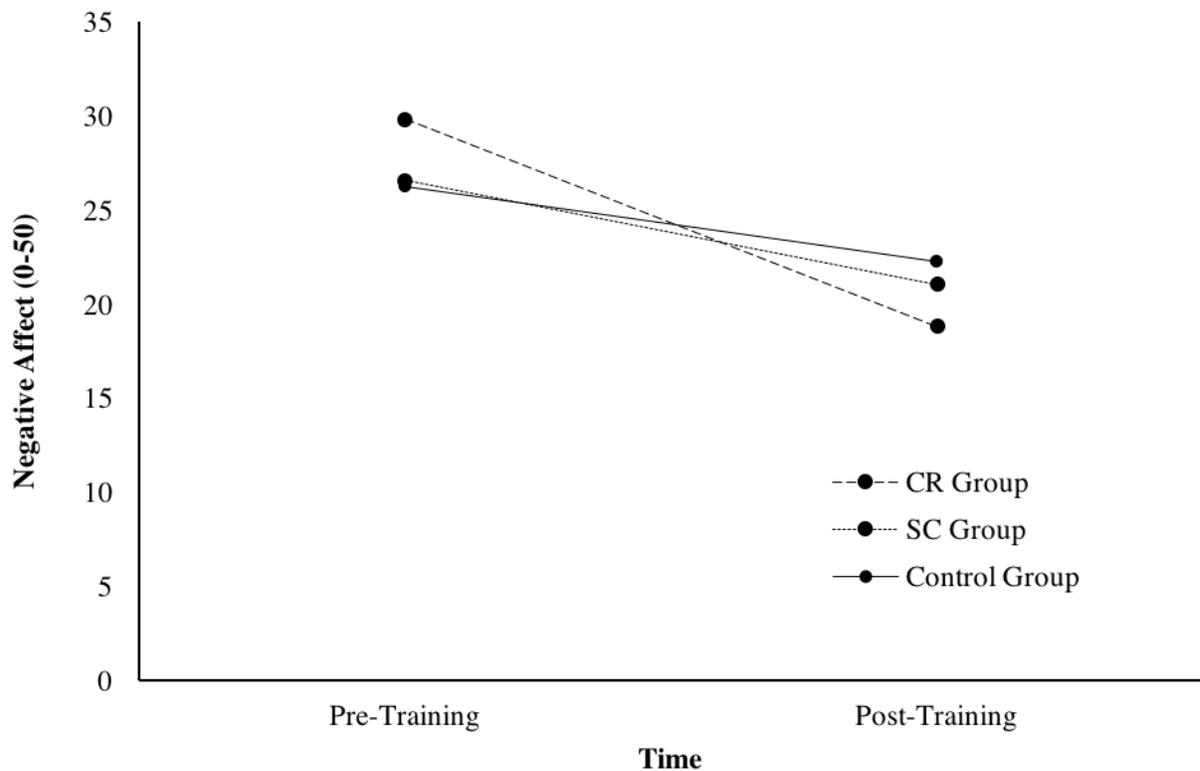


Figure 2. Statistically significant group by time interaction on the PANAS-S scale of negative affect from pre- to post-training. There was also a main effect for time, but not for group. Paired sample t-tests found that all three groups reported improved negative affect from pre-training to after the session. CR = Cognitive Restructuring; SC = Self-Compassion.

There was a main effect for time $F(1,71) = 53.20, p < .001, \eta^2_p = .425$, but not for group, $F(1,71) = .024, p = .98, \eta^2_p = .001$. Pairwise comparisons did not show that any one group had a significantly greater pre- to post-training change in negative affect than the others ($ps = 1.00$).

Post-hoc paired sample t-tests were conducted in order to better understand the outcomes within each group (Table 3). All three groups experienced a significant reduction in negative state affect from pre-training to post-training; however, when examining Cohen's effect sizes, the CR group demonstrated a very large effect, while the SC and Control groups showed a moderate effect. These differences in effect size appear to have driven the significant interaction between group and time despite the fact that the changes within each group were not significantly different from one another. In contrast, the interaction between time and group on state positive affect from pre- to post-training was non-significant, $F(1, 72) = 1.80, p = .172, \eta^2_p = .048$. There was a significant main effect for time, $F(1,73) = 65.44, p < .001, \eta^2_p = .476$, but not for group, $F(1,73) = 1.84, p = .166, \eta^2_p = .048$. Post-hoc paired sample t-tests revealed that all three groups reported significant increases in positive affect after the training session (Table 3). Overall, these results were consistent with the initial hypothesis that all of the strategies would be effective in improving body-related positive and negative affect after the training session.

Hypothesis 1b: Body Satisfaction/Dissatisfaction

When assessing VAS body dissatisfaction scores, the interaction between group and time was non-significant, $F(1, 73) = 1.31, p = .275, \eta^2_p = .035$. There was a main effect for time, $F(1,73) = 33.19, p < .001, \eta^2_p = .313$, but not for group, $F(1,73) = 0.54, p = .580, \eta^2_p = .015$. Post-hoc analyses were conducted for the main effect for time (Table 3). Paired sample t-tests indicated that the CR and Control groups improved to a significant degree on body dissatisfaction from pre- to post-training, but the SC group did not (although the SC group was approaching significance, $p = .055$). Participants' responses on the VAS measure of state body satisfaction demonstrated a consistent pattern, whereby the interaction between group and time was non-significant, $F(1, 73) = 0.92, p = .405, \eta^2_p = .025$. There was a main effect for time,

$F(1,73) = 56.47, p < .001, \eta^2_p = .440$, but not for group, $F(1,73) = 0.56, p = .570, \eta^2_p = .015$.

Post-hoc paired sample t-tests indicated that all three groups reported significantly improved body satisfaction from pre- to post-training (Table 3). These findings only partially support the hypothesis that both the CR and SC strategies would produce larger improvements in negative body image from pre- to post-training as compared to the Control strategy, as the SC group did not show improvements at post-training and the Control group did.

Impact of Strategies on Body Image from Baseline to Follow-Up

The subsequent analyses examined changes to negative body image that occurred from baseline (completed the week prior to the training session) to 1-week follow-up, as a result of training in and practice with assigned strategies. A 3 (Group: CR vs. SC vs. Control) by 2 (Time: baseline vs. 1-week follow-up) mixed model ANOVA was performed with participants' BSQ-16 scores. Similar to the analyses above, appropriate post-hoc analyses were conducted to further examine significant interactions and main effects. Since the analyses were planned a priori, Bonferroni corrections were not applied. Results, including effect sizes, are presented in Table 4 below.

Table 4

Changes to Global Body Image One Week Following the Training Session

	Baseline	1-week FU	<i>t</i> value	<i>ES</i> (<i>d</i>)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
CR Group	71.52 (10.9)	52.40 (17.9)	5.09***	1.02
SC Group	69.19 (9.9)	55.84 (18.0)	4.32***	0.85
Control Group	70.82 (10.3)	63.93 (19.1)	1.99	0.38

Note. Paired-samples t-tests compared responses on the BSQ-16 assessing global body image ($n = 25$ for the CR and Control groups, $n = 24$ for the SC group) before and after the training session. The df for the t-tests in the CR and SC groups is 24, and the df for the Control group is 23. ES = effect size (.2 = small effect, .5 = medium effect, .8 = large effect; Cohen, 1992). Cohen's d (d) was selected to be used as the measure of effect size. Effect sizes were computed from the t-tests (Thalheimer & Cook, 2002). CR = Cognitive Restructuring; SC = Self-Compassion; df = degrees of freedom; PANAS = Positive and Negative Affect Scale; VAS = Visual Analogue Scale.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Hypothesis 2: Negative Body Image. When assessing changes in body image, the group by time interaction for BSQ-16 scores was significant, $F(2, 72) = 3.18, p < .05, \eta^2_p = .077$ (Figure 3). There was also a significant main effect for time, $F(1, 73) = 43.56, p < .001, \eta^2_p = .364$, but not for group, $F(1, 73) = 1.67, p = .195, \eta^2_p = .042$. Pairwise comparisons did not show that any one group had a significantly greater change in negative body image than the others ($ps > 0.05$). Post-hoc paired sample t-tests found that both the CR and SC groups reported significant improvements in negative body image from baseline to 1-week follow-up, whereas the Control group did not. Furthermore, the improvements reported by the CR and SC groups represented a large effect (Table 4).

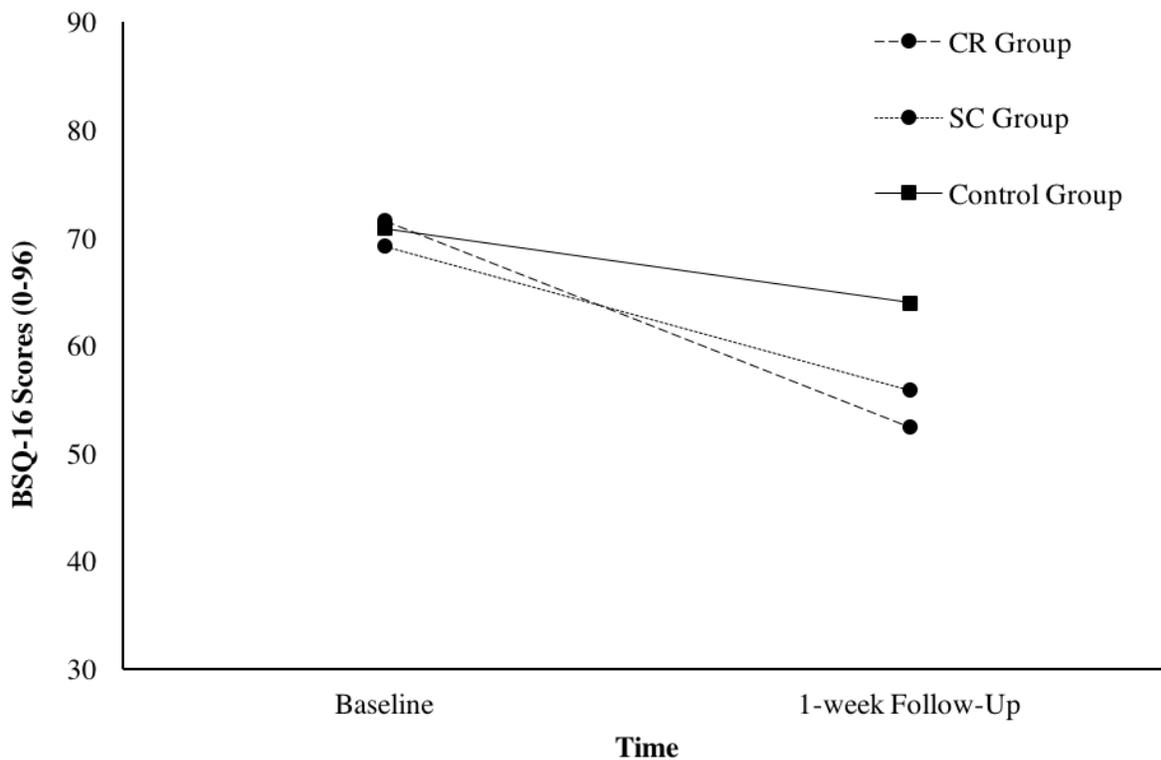


Figure 3. Significant group by time interaction on global body image, as measured by the BSQ-16, from baseline to follow-up. Higher scores represent poorer body image. There was a main effect for time. Post-hoc paired sample t-tests show that both the CR and SC groups improved from pre- to post-training, while the Control group did not. Post-hoc paired sample t-tests found that both the CR and SC groups reported significant reductions in negative body image, whereas the Control group did not. CR = Cognitive Restructuring; SC = Self-Compassion.

To further examine changes to body image across the follow-up period, paired sample t-tests were conducted to assess changes in VAS body satisfaction/dissatisfaction scores across the practice time period, and to establish whether changes were maintained from pre-training to the 1-week follow-up. Post-training improvements in VAS body dissatisfaction observed in the CR group (see Table 3) remained one week later, as there was a significant reduction in body dissatisfaction from pre-training ($M = 73.38, SD = 20.5$) to follow-up ($M = 52.69, SD = 20.0$),

$t(24) = 3.43, p = .002$. Although the SC group did not report changes in body dissatisfaction from pre- to post-training (see Table 3), they did report a significant reduction in body dissatisfaction from pre-training ($M = 70.20, SD = 20.2$) to follow-up ($M = 53.38, SD = 24.0$), $t(24) = 4.47, p < .001$. The Control group initially reported improvements in body dissatisfaction after the training session (see Table 3); however, this effect diminished over the follow-up period, whereby the change in body dissatisfaction from pre-training ($M = 66.26, SD = 19.4$) to 1-week follow-up ($M = 56.88, SD = 22.8$) was non-significant $t(24) = 1.65, p = .119$.

With respect to VAS body satisfaction, paired sample t-tests indicated that the CR group maintained their post-training improvements (see Table 3), whereby there was a significant increase in body satisfaction from pre-training ($M = 25.21, SD = 20.1$) to follow-up ($M = 46.71, SD = 15.7$), $t(24) = -4.95, p < .001$. The SC group showed the same pattern of increased body satisfaction from pre-training ($M = 32.04, SD = 10.2$) to follow-up ($M = 48.00, SD = 22.5$), $t(24) = -2.61, p = .017$. The Control group initially reported improvements in body satisfaction after the training session (see Table 3); however, this effect diminished over the follow-up period, whereby the change in body satisfaction from pre-training ($M = 29.29, SD = 18.2$) to 1-week follow-up ($M = 43.39, SD = 22.7$) was non-significant, $t(24) = -2.03, p = .060$ (although this did approach significance). Taken together, these results are consistent with the original hypothesis that the CR and SC strategies would outperform the Control strategy on improving body image from pre-training to the 1-week follow-up.

Impact of Strategies on Related Psychological Variables from Baseline to Follow-Up

When assessing the effect of condition on changes in self-compassion, self-esteem, body-image cognitive distortions, body surveillance, and body image flexibility, 3 (Group: CR vs. SC vs. Control) by 2 (Time: baseline vs. 1-week follow-up) mixed model ANOVAs were used to

analyze scores from the SCS, SSES, ABCD, OBCS-SS, and BI-AAQ, respectively. Significant omnibus interactions and main effects were followed up using appropriate post-hoc t-tests.

Results, including effect sizes, are presented in Table 5 below.

Table 5

Changes to Related Psychological Variables One Week Following the Training Session

Variable	Baseline	1-week FU	<i>t</i> value	<i>ES</i> (<i>d</i>)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
SCS				
CR Group	2.52 (0.62)	3.04 (0.63)	-4.05***	0.81
SC Group	2.67 (0.54)	3.13 (0.47)	-4.36***	0.87
Control Group	2.52 (0.54)	2.55 (0.75)	-.196	.038
SSES				
CR Group	51.56 (11.15)	65.12 (13.96)	-6.97***	1.39
SC Group	56.84 (10.19)	66.13 (9.88)	-3.54**	0.71
Control Group	48.65 (11.90)	55.62 (9.62)	-3.46**	0.68
ABCD				
CR Group	2.63 (0.82)	1.68 (0.71)	5.93***	1.19
SC Group	2.30 (0.70)	1.67 (0.68)	4.03***	0.81
Control Group	2.62 (0.80)	2.36 (0.74)	2.41*	0.47
OBCS-SS				
CR Group	5.38 (0.84)	4.54 (1.1)	4.08***	0.82
SC Group	5.34 (1.1)	4.28 (1.3)	4.58***	0.92
Control Group	5.25 (.88)	4.83 (0.8)	2.87**	0.56
BI-AAQ				
CR Group	40.24 (14.9)	47.16 (13.3)	-2.81**	0.56
SC Group	41.56 (12.8)	52.71 (13.3)	-4.74***	0.95
Control Group	40.85 (17.1)	44.75 (12.8)	-1.54	0.30

Note. Paired-samples t-tests compared responses ($n = 25$ in the CR and Control groups, 24 in the SC group) before and 1 week after the session. Thus, the df for the t-tests in the CR and Control groups is 24, and the df for the SC group is 23. ES = effect size (.2 = small effect, .5 = medium effect, .8 = large effect; Cohen, 1992). Cohen's d (d) was selected as the measure for effect size. Effect sizes were computed from the t-tests (Thalheimer & Cook, 2002). CR = Cognitive Restructuring; SC = Self-Compassion; df = degrees of freedom; BSQ-16 = Body Shape Questionnaire-16; ABCD = Assessment of Body Cognitive Distortions; OBCS-SS = Objectified Body Consciousness Scale – Surveillance Subscale; BI-AAQ = Body Image Action and Acceptance Questionnaire.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Hypothesis 3a: Self-Compassion. There was a significant interaction between group and time on the SCS, $F(2, 73) = 4.24, p < .05, \eta^2_p = .104$ (see Figure 4). There were main effects for both time, $F(1, 73) = 19.9, p < .001, \eta^2_p = .215$, and for group, $F(1, 73) = 3.56, p < .05, \eta^2_p = .089$. Pairwise comparisons indicated that the change in self-compassion in the Control group was significantly less than that of the SC group ($MD = 0.36, p = .011$). The comparison between the CR and the Control group was nearing significance ($MD = .24, p = .083$). Post-hoc paired sample t-tests found that both the CR and SC groups improved significantly from baseline to follow-up, while the Control group did not (Table 5). Furthermore, the improvements reported by the CR and SC groups were large in magnitude, whereas the changes seen in the Control group had a small effect size (Table 5). To further explore the main group effect, post-hoc independent samples t-tests were conducted. The CR and Control groups did not differ with respect to self-compassion at baseline, $t(53) = -0.31, p = .759$, but significantly differed at follow-up, $t(48) = 2.55, p = .014$. The SC group also did not differ from the Control group on

self-compassion prior to the training session, $t(51) = -0.40, p = .689$, but significantly differed at follow-up, $t(47) = -3.34, p = .002$. The difference in SCS scores between the SC and CR groups was non-significant at baseline $t(51) = -0.67, p = .509$, and at follow-up, $t(48) = 0.59, p = .553$. These findings partially support the study's hypothesis, as both the SC and CR strategies outperformed the Control strategy on improving self-compassion, but the SC group reported a comparable improvement on this outcome to the CR group rather than showing a larger effect as was initially predicted.

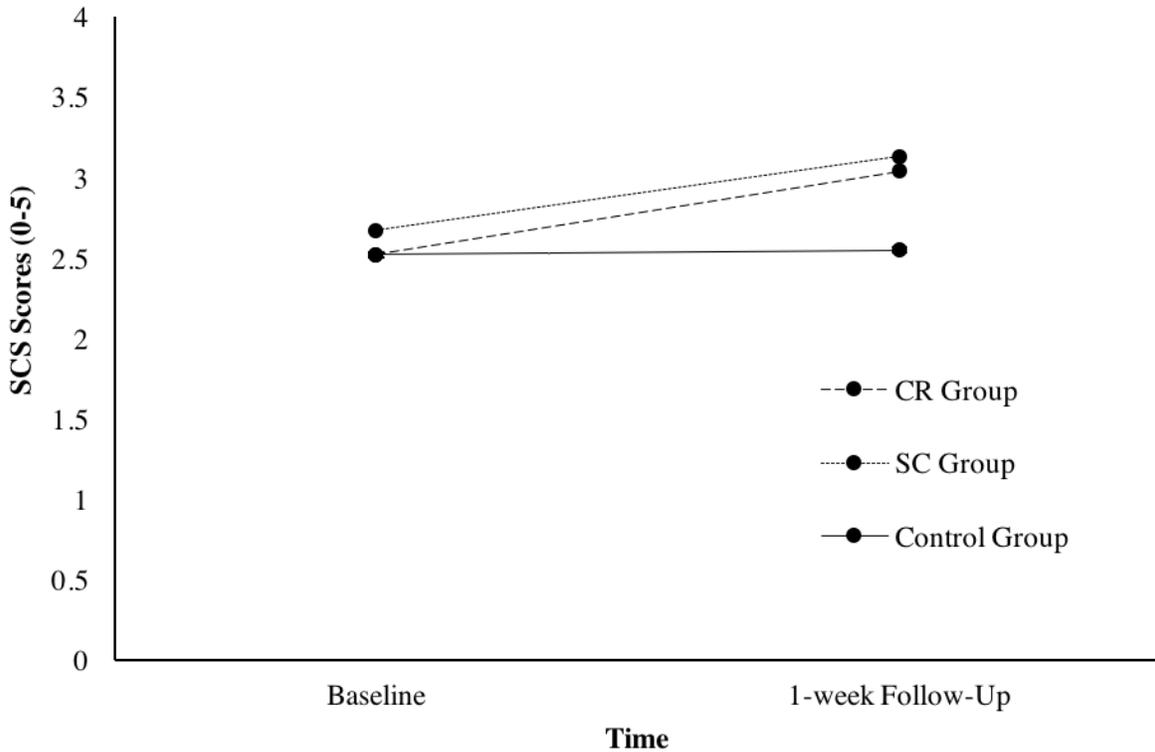


Figure 4. Statistically significant group by time interaction on self-compassion scores, as measured by the SCS, from baseline to follow-up. Pairwise comparisons found that the changes in the CR and SC groups on self-compassion were significantly greater than changes in the Control group. CR = Cognitive Restructuring; SC = Self-Compassion.

Self-Compassion Subscales. The SCS consists of six subscales: self-kindness, common humanity, mindfulness, self-judgment, isolation, and overidentification. The results for each of the six SCS subscales are presented in Table 6 below.

Table 6

Changes to Self-Compassion Subscales One Week Following the Training Session

	Baseline	1-week FU	<i>t</i> value	<i>ES</i> (<i>d</i>)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
Self-Kindness				
CR Group	2.60 (0.87)	3.12 (0.67)	-2.99**	0.59
SC Group	2.73 (0.83)	3.28 (0.73)	-3.05**	0.62
Control Group	2.69 (1.12)	2.92 (0.71)	-0.90	0.18
Common Humanity				
CR Group	2.79 (0.76)	3.14 (0.65)	-2.43*	0.48
SC Group	2.95 (0.79)	3.46 (0.54)	-2.89**	0.59
Control Group	2.81 (1.05)	3.02 (0.87)	-0.86	0.19
Mindfulness				
CR Group	2.77 (0.65)	3.30(0.58)	-3.48**	0.69
SC Group	2.91 (0.82)	3.36 (0.63)	-3.82***	0.78
Control Group	2.93 (1.03)	2.94 (0.63)	0.82	0.18
Self-Judgment				
CR Group	3.68 (0.72)	3.07 (0.82)	3.65**	0.73
SC Group	3.61 (1.07)	3.10 (0.56)	2.48*	0.51
Control Group	3.65 (0.94)	3.23 (0.86)	2.31*	0.50
Isolation				
CR Group	3.57 (10.9)	3.05 (0.97)	2.79**	0.56
SC Group	3.55 (9.9)	3.15 (0.58)	2.24*	0.46
Control Group	4.00 (10.3)	3.54 (0.83)	2.56*	0.56
Over-Identification				
CR Group	3.80 (3.21)	3.21 (0.92)	3.07**	0.61
SC Group	3.33 (3.08)	3.08 (1.06)	1.09	0.22
Control Group	3.79 (3.42)	3.42 (0.87)	2.43*	0.53

Note. Paired-samples t-tests compared responses on the BSQ-16 ($n = 25$ for the CR and Control groups, $n = 24$ for the SC group) before and after the training session. The *df* for the t-tests in the CR and Control groups is 24, and the *df* for the SC group is 23. ES = effect size (.2 = small effect, .5 = medium effect, .8 = large effect; Cohen, 1992). Cohen's *d* (*d*) was selected to be the measure of effect size. Effect sizes were computed from the t-tests (Thalheimer & Cook, 2002). CR = Cognitive Restructuring; SC = Self-Compassion; *df* = degrees of freedom; PANAS = Positive and Negative Affect Scale; VAS = Visual Analogue Scale.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Analyzing the subscales was exploratory because there were no specific a-prior hypotheses regarding the SCS subscales. With respect to self-kindness, there was a main effect for time $F(1, 73) = 13.63, p = .000, \eta^2_p = .169$, but there was no significant interaction, $F(1, 73) = 0.337, p = .508, \eta^2_p = .020$, or main effect for group, $F(1, 73) = 0.54, p = .538, \eta^2_p = .016$. Follow-up t-tests showed that the CR and the SC group improved on self-kindness, but the Control group did not. The common humanity subscale also found a significant main effect for time, $F(1, 73) = 10.92, p = .002, \eta^2_p = .140$, but not for group, $F(1, 73) = 1.36, p = .264, \eta^2_p = .039$. There was no significant group by time interaction, $F(1, 73) = 0.65, p = .528, \eta^2_p = .019$. Post-hoc t-tests showed that the CR and SC group improved on common humanity, but that the Control group did not. The only subscale to demonstrate a significant interaction was mindfulness, $F(1, 73) = 5.23, p = .008, \eta^2_p = .135$. Mindfulness also showed a main effect for time, $F(1, 73) = 7.39, p = .008, \eta^2_p = .099$, but not for group, $F(1, 73) = 0.21, p = .810, \eta^2_p = .006$. Post-hoc pairwise comparisons were non-significant, indicating that no one condition produced more change in mindfulness than any other. However, follow-up t-tests showed that the CR and SC group improved on mindfulness, but the Control group did not. With respect to

self-judgment, there was no group by time interaction, $F(1, 73) = 0.22, p = .802, \eta^2_p = .007$, or main effect for group, $F(1, 73) = 0.11, p = .894, \eta^2_p = .003$; however, there was a main effect for time, $F(1, 73) = 22.82, p = .000, \eta^2_p = .254$. Follow-up t-tests showed that the CR and SC group reported reductions on self-judgment, but the Control group saw no significant improvements. The isolation subscale showed a significant main effect for time, $F(1, 73) = 19.04, p = .000, \eta^2_p = .221$. There was no interaction between group and time on isolation, $F(1, 73) = 0.10, p = .904, \eta^2_p = .003$, and no main effect for group, $F(1, 73) = 2.24, p = .115, \eta^2_p = .063$. Follow-up t-tests showed that all three groups demonstrated reductions in isolation from baseline to follow-up. Finally, with respect to over-identified emotions, there was no significant interaction, $F(1, 73) = 0.81, p = .450, \eta^2_p = .024$, and no significant main effect for group, but there was a significant main effect for time, $F(1, 73) = 12.51, p = .001, \eta^2_p = .157$. Interestingly, follow-up paired sample t-tests showed that the CR and Control groups demonstrated increases on the over-identification of emotions, but not the SC group.

Hypothesis 3b: Body Image Flexibility. The interaction between group and time on the BI-AAQ was non-significant $F(2, 73) = 2.21, p = .117, \eta^2_p = .268$ (Table 5). There was a significant main effect for time, $F(1, 73) = 26.69, p < .001, \eta^2_p = .057$, but not for group, $F(1, 73) = 0.84, p = .440, \eta^2_p = .023$. Post-hoc paired sample t-tests found that both the CR and SC groups improved significantly from baseline to follow-up, whereas the Control group did not (Table 5). In terms of effect size, the improvements in body image acceptance were large in the SC group, moderate in the CR group, and small in the Control group (Table 5). These findings are in line with the initial hypothesis that both the CR and SC strategies would result in greater improvements to body image flexibility than the distraction strategy.

Hypothesis 3c: Body-Image Cognitive Distortions. The degree to which participants' endorsed body-related cognitive distortions, as assessed by the ABCD demonstrated a significant group by time interaction, $F(2, 73) = 6.16, p < .01, \eta^2_p = .144$ (Figure 5).

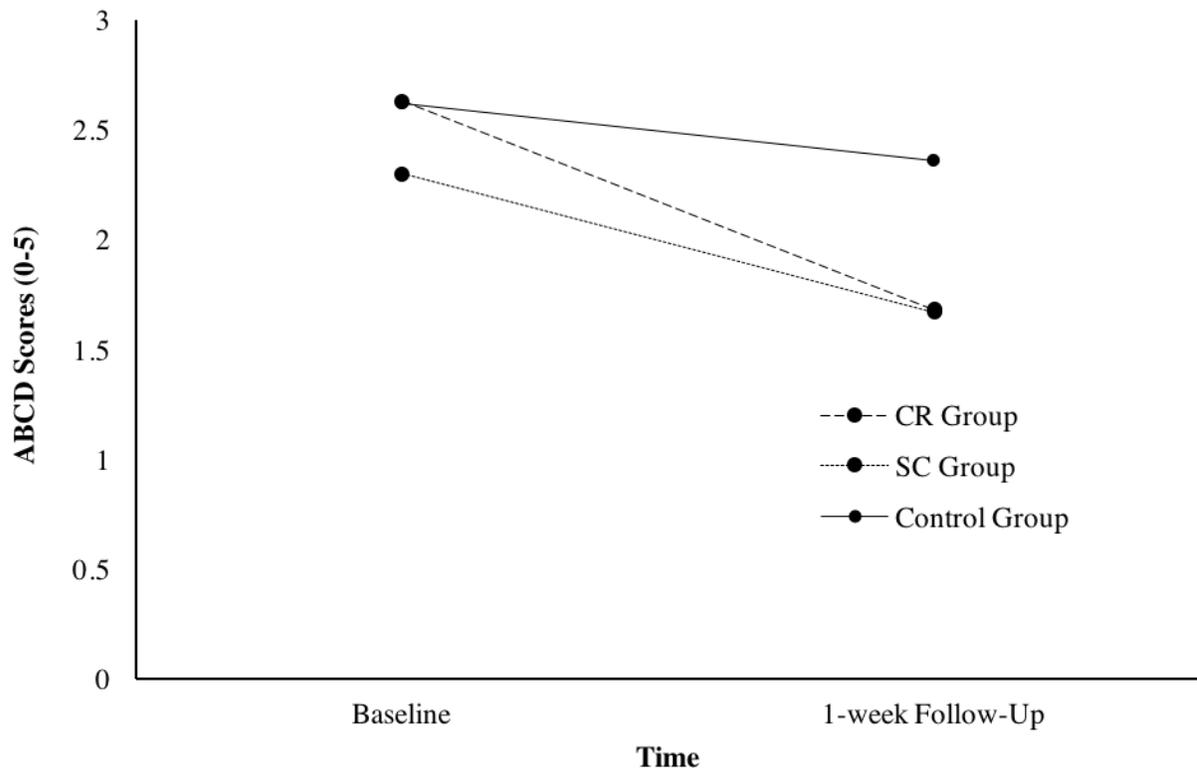


Figure 5. Statistically significant group by time interaction on the report of cognitive distortions related to body image, as measured by the ABCD, from baseline to follow-up. There were significant main effects for both time and group on this outcome. Post hoc pairwise comparisons show that the change in ABCD scores in the Control group was significantly less than that of the CR group. CR = Cognitive Restructuring; SC = Self-Compassion.

There were significant main effects for both time, $F(1, 73) = 55.70, p < .001, \eta^2_p = .433$, and group, $F(1, 73) = 3.88, p < .05, \eta^2_p = .096$. Post hoc pairwise comparisons indicated that the Control group reported significantly less change in cognitive distortions than the SC group ($MD = -0.49, p = .008$). The comparison between the CR and the Control group was nearing

significance ($MD = -0.33, p = .075$). Paired sample t-tests indicated that all three groups improved significantly from baseline to follow-up (Table 5). Post-hoc pairwise comparisons indicated that the reduction in cognitive distortion endorsement in the SC group was significantly greater than the change in the Control group ($MD = 0.50, p < .05$), however, the difference between the CR group and Control group were not significantly different ($MD = 0.33, p = .075$). Follow-up paired sample t-tests show that all three groups improved significantly from baseline to follow-up (Table 5). The effects for the CR and SC groups were both large, whereas the effect for the Control group was small (Table 5). To further explore the main group effect, post-hoc independent samples t-tests were conducted. The CR and Control groups did not differ with respect to endorsement of cognitive distortions at baseline, $t(53) = -0.28, p = .781$, but did significantly differ at follow-up, $t(48) = 3.29, p = .002$. The SC and Control groups also did not significantly differ with respect to scores on the ABCD pre-training, $t(51) = 1.14, p = .260$, but did significantly differ at follow-up, $t(47) = 3.36, p = .002$. The SC and CR groups did not significantly differ on ABCD scores at baseline $t(51) = -1.31, p = .195$, or at follow-up, $t(48) = -0.44, p = .965$. These CR strategy would have the greatest impact on body image cognitive distortions (Hypothesis 3c); however, large effects were reported for both CR and SC strategies. These findings partially support the initial hypothesis, as both the SC and CR strategies outperformed the Control strategy on improving cognitive distortions, but the CR group reported a comparable improvement on this outcome to the SC group rather than showing a larger effect as was originally predicted.

Hypothesis 3d: Body Surveillance. The interaction between group and time on the OBCS-SS was non-significant, $F(2, 73) = 2.60, p = .081, \eta^2_p = .067$ (Table 5). There was a significant main effect for time, $F(1, 73) = 46.31, p < .001, \eta^2_p = .388$, but not for group, $F(1,$

73) = 0.43, $p = .650$, $\eta^2_p = .012$. Post-hoc paired-samples t-tests found that all three groups reported significant reductions in body surveillance from baseline to follow-up, with large effects seen in the CR and SC groups and a moderate effect seen in the Control group (Table 5). In contrast to the hypotheses that the CR and SC groups would report greater improvements on this measure as compared with the Control group, these findings show that all three groups improved the extent to which they monitored their appearance in an objectifying manner.

Hypothesis 3e: State Self-Esteem. The interaction between group and time on the SSES was non-significant, $F(2, 73) = 2.29$, $p = .108$, $\eta^2_p = .059$. There were significant main effects for time, $F(1, 73) = 60.58$, $p < .001$, $\eta^2_p = .454$, and for group, $F(1, 73) = 6.10$, $p < .01$, $\eta^2_p = .143$ (Table 5). Paired-samples t-tests indicated that all of the groups improved significantly from baseline to follow-up, with the CR group showing a large effect and the SC and Control groups showing a moderate effect (Table 5). To further explore the main group effect, post-hoc independent samples t-tests were conducted. The CR and Control groups did not differ with respect to self-esteem at baseline, $t(53) = 0.73$, $p = .466$, but did differ significantly at follow-up, $t(48) = 2.839$, $p = .007$. Despite randomization, the SC group reported significantly higher self-esteem than the Control group prior to the training session, $t(51) = 2.31$, $p = .025$. This difference is explored further in the discussion. The discrepancy in self-esteem between these two groups remained significant at follow-up, $t(47) = 3.84$, $p = .000$. The difference in SSES scores between the SC and CR groups was non-significant at baseline, $t(51) = -1.54$, $p = .129$, and at follow-up, $t(48) = -0.29$, $p = .770$. These findings partially support the original hypothesis that the CR and SC strategies would produce a greater impact on self-esteem as compared with the Control strategy, as all of strategies resulted in significant improvements.

Evaluation of Strategies at Follow-Up

After completing the questionnaire packet at the 1-week follow-up, participants were asked to rate their experience with their assigned strategy and a multivariate ANOVA (MANOVA) was conducted to compare these evaluations across the groups. Results are presented in Table 7 below.

Table 7

Participants' Evaluation Ratings of the Strategies

	CR (<i>n</i> = 20)	SC (<i>n</i> = 20)	Control (<i>n</i> = 19)	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i> (2,55)
How credible was the explanation of the strategy?	4.30 (0.66)	3.95 (1.09)	3.62 (0.96)	2.23
Before you tried it, how well did you think the strategy would work for you?	2.85 (1.04)	2.70 (0.92)	2.38 (0.87)	0.94
How successful were you in practicing the strategy?	3.65 (0.99)	3.55 (1.05)	3.15 (1.21)	0.89
How helpful do you think the strategy would be in reducing body dissatisfaction if you continued using it?	3.90 (0.79)	3.75 (1.21)	3.04 (0.95)	2.83*

Note. One way ANOVAs were conducted to compare participants' responses (*n* = 20 in the CR and SC groups, 19 in the Control group) across groups. CR = Cognitive Restructuring; SC = Self-Compassion.

* $p < .05$; ** $p < .01$; *** $p < .001$.

There was a significant difference between the groups regarding the perceived helpfulness of the strategy for managing negative body image in a stressful situation that made them feel badly about their body if they continued using the strategy in the future (item #4), $F(2,50) = 2.83, p = .048, \eta^2_p = .120$. Pairwise comparisons indicated that cognitive restructuring was perceived to be significantly more helpful than distraction ($MD = 0.82, p < .05$) whereas self-compassion was not perceived to be significantly more helpful than distraction ($MD = .67, p = .066$). There were no significant differences in the perceived helpfulness of the CR and SC strategies. There were no significant differences between the groups with respect to the perceived credibility of the assigned strategy, $F(2,50) = 2.23, p = .118, \eta^2_p = .082$, their perceived success in practising their assigned strategy, $F(2, 50) = 0.89, p = .414, \eta^2_p = .035$, or their belief that the assigned strategy would work for them prior to practising it, $F(2,50) = 0.94, p = 0.39, \eta^2_p = .036$.

Discussion

The present study was the first to examine the effect of a single-session of training in cognitive restructuring, self-compassion, or distraction on negative body image and related psychological variables in body dissatisfied women with higher body weight. The impact of training in each strategy was examined, both on state measures of body satisfaction and affect immediately following the session (post-training), as well as on global body image and other relevant psychological variables one week later.

Impact of Strategies on Affect at Post-Training

It was initially hypothesized that all three training strategies would lead to improvements in state affect from pre- to post-training and that the SC group would report the greatest effect, followed by the CR group and then the Control group (Hypothesis 1a). This hypothesis was partially supported. Participants in all three conditions reported significant increases in positive

affect (e.g., “inspired”, “strong”) and decreases in negative affect (e.g., “guilty”, “angry at self”) relating to their bodies. This means that, on average, participants across the three experimental groups experienced less negative affect and more positive affect about their bodies after being taught their assigned strategy. Although there were no significant group differences on pre-post changes in affect, the impact of the strategies on negative affect was greatest for the CR group (large effect) followed by the SC and Control groups (moderate effects). In terms of positive affect, the CR and SC strategies both showed a large effect and the Control strategy had a moderate effect. These findings suggest that all of the strategies were effective in improving affect individuals with higher body weight following being weighed, but the CR strategy produced the greatest improvement in participants’ positive and negative emotions related to their bodies over the course of the training session.

The current study’s findings are not entirely consistent with the initial hypothesis that the SC strategy would produce the greatest impact (Hypothesis 1a), but they are not in conflict with the literature. Although there were no previous studies examining the effect of CR or SC on state affect in individuals with negative body image, research in the field of mood and anxiety has demonstrated that these strategies can improve affect. More specifically, a single session of cognitive restructuring training for individuals with Social Anxiety Disorder (SAD) significantly reduced the negative affect associated with post-event processing after an anxiety-provoking task (Shikatani, Antony, Kuo, & Cassin, 2014). The current finding that the SC group reported improved affect is consistent with prior results showing that the habitual use of self-compassion is associated with fewer negative and more positive emotions (MacBeth & Gumley, 2012; Neff et al., 2007). The same self-compassion letter-writing task that was incorporated into the SC condition in the current study was found in another study to improve state affect among

participants who were prompted to recall an event that made them feel ashamed (Friis, Johnson, & Consedine, 2017). An experimental test of the effect of cognitive reappraisal (“think about this in a way that minimizes negative feelings”) versus acceptance (“let feelings come and go without trying to control them”) found that both strategies were equally efficacious at reducing subjective distress (as measured by the PANAS-S) brought on by an upsetting film clip (Wolgast, Lundh, & Viborg, 2011). The current finding that CR and SC strategies, even in relatively small doses, help people to feel better adds to the extant literature, and furthers our understanding of how to diminish psychological distress associated with weighing in body dissatisfied individuals.

The Control strategy of distraction also produced a significant improvement in affect. These findings are consistent with the study by Etu and Gray (2009) showing that participants who were instructed to distract from an imagined body image trigger experienced less physical appearance anxiety than those asked to ruminate about the event, even after controlling for weight, depression, and baseline body image. Distraction has been shown to be an effective way of coping with negative affect in the context of depression and anxiety as well. Dr. Nolen-Hoeksema has spearheaded much of the work in this field. She and colleagues Girgus and Seligman (1992) proposed the Response Style Theory (RST), which posits that one’s cognitive response to negative emotions predict the onset and severity of depression. Based on the RST, responding to low mood with rumination increases the risk that the negative mood will last longer and/or worsen in severity, whereas distraction has been shown to reduce depressed mood. The RST has been demonstrated in studies investigating the use of distraction (as compared with rumination) to manage depressive emotions (Morrow & Noel-Hoeksema, 1990; Nolen-Hoeksema & Morrow, 1993; Nolen-Hoeksema & Morrow, 1991) as well as anxiety (Blagden &

Craske, 1996; Wong & Moulds, 2009). Distraction has even been found to predict positive treatment response to pharmacological interventions for depression (Bagby et al., 1999).

These studies support the hypothesis that distraction is superior to rumination in managing negative affect; however, there is some uncertainty regarding whether differences in outcomes between the two cognitive responses were due to the worsening of mood by rumination, the improvement of mood by distraction, or a combination of both. Cognitive and behavioural distraction appears to be a way for individuals to avoid rumination, and thus it attenuates negative emotional states. The current finding that the process of distraction produced an effect that was almost equivalent to that of the active strategies in attenuating a negative emotional response to a salient body image trigger begs the speculation that it may be doing more than counteracting rumination. The current study contributes to the literature on the benefits of distraction, whereby it appears to carry the same function in improving short-term affect associated with poor body image following a salient body image trigger. Limitations notwithstanding, these results indicate that the learning of any of the three strategies will improve body-related affect after being weighed, at least in the short-term.

Impact of Strategies on Body Image at Post-Training and 1-Week Follow-Up

It was hypothesized that both the CR and SC strategies would produce larger improvements in negative body image from pre-training to post-training (Hypothesis 1b) and to the 1-week follow-up than the Control strategy (Hypothesis 2). Consistent with the original hypotheses, the CR group reported significant improvements in both state body satisfaction and dissatisfaction at post-training, which were maintained over the follow-up period. The SC group also reported a significant improvement in body satisfaction after the session, which was stable over follow-up. On the other hand, the SC group did not report a significant reduction in body

dissatisfaction following the training session. This finding was contrary to the hypothesis that the CR strategies would not perform as well as the SC strategies on improving body image because negative beliefs about one's weight may be difficult to challenge given the social context of weight-based stigma (Puhl & Brownell, 2001; 2006). Individuals with higher body weight are subjected to weight bias and may receive critical comments about their weight from family, strangers, and health care providers. This was predicted to be an obstacle that could reduce the impact of the CR training, and thus thwart improvements in body image for this group, however the results suggest this was not as much of an obstacle as predicted. Across the one week of practice, the SC group did show significant improvements in body dissatisfaction at follow-up, which was in line with the hypothesized outcome. The Control group reported significant improvements in state body satisfaction and dissatisfaction from pre-training to post-training, but these improvements were not sustained over the 1-week follow-up period.

In the Body Image Handbook (Cash & Smolak, 2012) the VAS is listed as a measure of state body image, whereby it specifically assesses experiences with body image in the moment. This can be problematic for body image because, as shown in diary studies, body dissatisfaction can shift significantly over the course of a week (Kelly & Stephen, 2016). Corroboration of these findings using a global scale-based measure of body image is necessary to better understand the impact of the strategies on body image with continued practice following the training session. Changes in BSQ-16 scores were examined from baseline to follow-up, and both the CR and SC groups experienced a significant and large decrease in global negative body image from baseline to follow-up. The Control group, on the other hand, did not report any improvement in global body image over the follow-up period. These results are consistent with the follow-up data from the VAS measures, and the converging results between the VAS and the BSQ-16 lend support

for the idea that very brief training in CR or SC strategies facilitates large improvements in body image over the course of a week, whereas distraction does not improve body image over the same period.

The current findings that CR strategies improved body image immediately and one week after the training session are consistent with the larger-scale CBT trial for body image. As reviewed previously, eight weekly sessions of CBT improved body image for individuals with a higher body weight (Rosen, Orosan, & Reiter, 1995). This clinical trial, in corroboration with results from the current experimental study, show that shifts in subjective body image can be achieved through CBT and CR techniques despite the fact that these skills involve participants challenging negative body image thoughts that, for higher body weight individuals, may be backed by evidence from their daily lives. In the present study, one participant in the CR group with a BMI in the severe obesity category (BMI of 50kg/m²) identified numerous negative thoughts about her body and her weight that had been supported by her social environment. For example, numerous stores, even plus sized stores, did not carry her size of clothing, a previous romantic partner broke off the relationship explicitly because of her weight, and she has to routinely buy two plane tickets to fly. These experiences all reinforced to this participant that her weight does contribute to past disappointments, restrict what she is able to do and wear, and is not “typical” by society’s standards. Despite this obstacle to shifting her thoughts, this participant was able to become aware that some of her thinking had become more negative than it ought to have been based on the evidence. She was also able to reappraise how important these negative body image events were in her life (e.g., a person who decides weight is an important enough indicator of worth is not who you value surrounding yourself with; needing to ask the

flight-attendants for a seatbelt extension did not need to have a lasting impact on day-to-day functioning).

The practice of CR strategies with the current sample of women clarified how a full CBT protocol could exert a positive impact for individuals with higher body weight in the trial by Rosen and colleagues (1995). In comparing the studies, it is also interesting to note that the sample of women in the current study reported higher baseline body dissatisfaction as compared with the sample used in the Rosen's (1995) trial. The average rating on the BSQ items at baseline in the current study was 4.40 of a possible 5 as compared with 3.92 in their study. However, it is important to consider that Rosen and colleagues (1995) did not screen their participants for the presence of negative body image. The present study makes a novel contribution in that it examined the specific impact of CR (as opposed to a complete CBT treatment protocol) on body image among women with higher body weight. These results provide further support that CR is helpful for inciting both immediate and longer-term changes in body image even after a single training session, and, as described by Alleva and colleagues (2015), is a vital component in CBT for body image.

Ramirez and Rosen (2001) reported less promising results in their study examining the efficacy of CBT for improving body image among individuals with higher body weight. In their study, 12 CBT sessions adjunctive to a weight loss program did not improve body image or weight loss over and above the behavioural weight loss program alone. Furthermore, the study concluded that CBT did not buffer against the worsening of body image that was associated with weight regain between the 3- and 12-month marks in the weight loss program. One reason for the discrepancy between these results and those from Rosen, Orosion, and Reiter (1995) may be that CBT was delivered to participants with the explicit goal of improving body image *and* weight

loss. In contrast, the trial by Rosen and colleagues (1995) and the present study shared a common emphasis on addressing thoughts and feeling associated with body image, rather than placing emphasis on weight status (or weight loss). A weight loss program inherently emphasizes that one's current body weight is not acceptable or desired, and thus targeting negative body image with a backdrop of encouraging weight loss appears contradictory. Thus, one proposed hypothesis for the mixed results in the two previous trials examining CBT for body image in individuals with higher body weight is that CBT (and CR) for body image provides no additional benefit when participants are simultaneously enrolled in a program that is promoting a change in body appearance or size. The same principle underlies the recommendation that body image treatment be conducted with individuals with eating disorders only once they have stopped engaging in restrictive eating and have at least partially let go of the dieting mentality (Fairburn, 2008).

In the current study, the SC group did not experience a reduction in body dissatisfaction at post-training, but did at follow-up. It may be interpreted from this finding that SC strategies require more time or practice in order to help women with higher body weight manage negative body image. However, this explanation is refuted by other studies that have found that a single prompt was sufficient in building self-compassion and having an effect on disordered eating attitudes (e.g., Adams & Leary, 2007). Alternatively, there is empirical evidence from the self-compassion literature that individuals practicing SC strategies may actually feel worse when initially learning and implementing SC skills. Germer and Neff (2013) have coined "backdraft" to describe early increases in distress that were seen in their MSC program participants. They proposed that before individuals are able to benefit from self-compassion, treating themselves with kindness can first evoke difficult memories and feelings from times when they were not

loved or accepted in the past. Furthermore, when people are previously unaware of the harm they are causing through self-criticism, it may be difficult to acknowledge how mean and critical they have been to themselves.

The backdraft explanation for the lack of short-term improvements in body dissatisfaction in the SC group is supported by the informal feedback provided by participants in the SC group. One individual wrote: “What I could not express in the questionnaires is that being mindful about my feeling about my weight actually gave me more distress. I realized that my coping mechanism has been to distract myself from my feelings; watching TV, shopping, dance classes, anything to keep my thoughts away from my physical appearance.” She went on to say: “Being mindful made me feel a bit hopeless and down. I pushed through these feelings by being kind to myself and accepting that I’m opening new feelings.” Another individual in the SC group said: “The personal interview really helped me think better about me. I guess talking about my parent's disapproval of my body helped me release inner critical thoughts I didn't mention to anyone before. It was hard to open up about how badly I have been treated, but it was a necessary thing to do.” In these cases, SC strategies are not causing distress per se, but are increasing awareness of critical thoughts and are opening the door to old memories. Backdraft is mitigated with continued practice of SC strategies (Germer & Neff, 2013), which may explain why body dissatisfaction in the SC group improved by follow-up one week after learning the strategy in the current study. Any positive effects of the SC strategies on body dissatisfaction may have been diluted post-training because of backdraft. Interestingly, body satisfaction scores increased for the SC group at both post-training and over the follow-up. Given that SC strategies focus on being in touch with and grateful for the body, body satisfaction may have been more

immediately impacted by SC strategies than body dissatisfaction. Body satisfaction might also have been more resistant to the effect of backdraft generally.

In the present study, the Control group initially improved on state body image following the training session, but these improvements were not maintained over the one-week follow-up period. Research has shown that distraction from negative body image thoughts was more helpful in improving body image in the moment than ruminating on them; however, the current study sheds light on the lack of long-term impact for this strategy (Etu & Gray, 2010).

Interestingly, the power of distraction as a short-term distress tolerance strategy is delineated in Dialectical Behavioural Therapy (DBT) protocols (Linehan, 1993). In this approach, the redirection of focus and attention away from distressing thoughts and feelings is considered a helpful approach, provided that individuals are not overly reliant on its use and are not distracting with maladaptive behaviours, like alcohol use or overeating. In DBT, distraction is encouraged for in-the-moment regulation of emotions, and is not recommended as a means to address cognitive patterns that may produce recurrent negative emotions. The current study's findings support the conceptualization of distraction as a beneficial emotion regulation strategy to help body dissatisfied women with higher body weight manage negative thoughts and emotions related to appearance and weight in the moment, but not as an effective skill at producing lasting changes to negative body image.

Impact of Strategies on Other Psychological Outcomes at 1-Week Follow-Up

Other psychological variables were examined in order to determine whether there were any changes in addition to those in body image and affect. These outcomes were examined across the strategy training groups between baseline and the follow-up time points.

Self-Compassion. Self-compassion was included as an outcome variable to examine if training in SC strategies actually facilitated a shift in self-compassion, as well as to help explain potential differences in body image outcomes across groups. Self-compassion improved significantly for both the CR and SC groups, and the effect sizes were large. In contrast, the Control group did not report a significant improvement on self-compassion. This finding demonstrates that the SC session was successful in promoting increased feelings of self-compassion over the course of a week. This is similar to other studies finding that relatively brief interventions can be used to promote increased levels of self-compassion (e.g., Adams & Leary, 2007). It was originally hypothesized that the SC group would report the greatest improvement in self-compassion (Hypothesis 3a); however, the CR reported a comparable improvement. Other areas of research have also found that CR promotes self-compassion. For example, in the management of trauma-related stress, Beaumont, Galpin and Jenkins (2012) compared CBT versus CBT plus Compassion-Focused Therapy (CFT) in individuals who had experienced trauma. Although CBT plus CFT outperformed CBT alone in improving self-compassion, the CBT group reported significant improvements in self-compassion from pre- to post-treatment (Beaumont, Galpin, & Jenkins, 2012).

The outcome data from the SCS subscales shed light on more specific aspects of self-compassion that were influenced by the strategy training. There was a consistent pattern of results across the “positive” subscales, Self-Kindness, Common Humanity, and Mindfulness, whereby the CR and SC groups reported significant improvements from baseline to follow-up but the Control group did not. Interestingly, the Control group reported significant improvements across all three of the “negative” subscales, including Self-Judgment, Isolation, and Over-identification. The CR group also significantly improved on all of these subscales, and the SC

group reported improvements on the Self-Judgment and Isolation subscale, but not on Over-identification. Thus, the benefits of distraction appear to lie more within its ability to counter maladaptive patterns of coping, rather than instilling new coping mechanisms, such as self-kindness, a curious attention to emotional phenomena, or a sense of shared humanity for faults or imperfections. The CR condition was the only strategy that managed to affect both positive and negative subscales within the SCS. The SC strategy seemed less effective at interrupting over-identification, the process of getting “wrapped up” in the emotion or the story one’s thoughts produce. Perhaps this aspect requires more time and practice with self-compassion, or the mindfulness component of self-compassion, which was not a specific focus of the training session, in order to shift. This finding is important, as a recent meta-analytic review of emotion regulation strategies and psychopathology found that the presence of a maladaptive emotion-regulation strategy tends to be more harmful than the relative absence of adaptive ones, with the exception of problem solving (Aldao, Nolen-Hoeksema, & Scheizer, 2010). This finding highlights that, generally speaking, strategies aimed at interrupting maladaptive mechanisms perpetuating negative body image are more advantageous than those designed to increase adaptive coping. These meta-analytic findings provide further context to help understand the unexpected positive effects of distraction on some outcomes in the current study. Overall, however, it was evident that the CR and SC conditions outperformed distraction on fostering self-compassion.

Body Image Flexibility. Body image (in)flexibility has recently emerged as a variable of interest in the body image field in congruence with the increased awareness of the detrimental impact that cognitive rigidity and inflexibility have on numerous areas of psychological functioning. In the field of body image, it has been identified that rumination about negative

body image thoughts predicts disordered eating patterns more strongly than body dissatisfaction alone (Verplanken & Velsvik, 2008). Body image flexibility measures how adaptable people respond to negative cognitions and emotions related to body image. An individual high in body image flexibility is better able to tolerate negative body image without significantly affecting their daily functioning, and to be less tempted to control or change critical body image thoughts or appearance in order to feel able to move toward goals or to engage in activities of value. Both CR and SC groups reported a significant increase in body image flexibility and acceptance, whereas the Control group did not. In line with the hypothesis (Hypothesis 3b), the SC strategy led to a large increase in flexibility whereas the CR strategy led to a moderate increase in flexibility, and both strategies resulted in more significant improvements than the distraction strategy.

The CR strategy demonstrated a moderate effect on body image flexibility in the current study, which is somewhat surprising considering that the CR group was trained to *change* thinking patterns. Even in challenging difficult thoughts about one's body in the CR condition, this result suggests that this strategy helped participants place less value on body image thoughts and to be more flexible in how they respond to these thoughts. This is logical given that CR invites people to adopt a new perspective on situations and lessen the rigidity of their beliefs. Other applications of CBT have shown that restructuring thinking patterns cultivates psychological flexibility. In a study comparing Acceptance and Commitment Therapy (ACT), a therapeutic approach specifically designed to enhance cognitive flexibility, to CBT, the two performed equally well in improving psychological flexibility for individuals with anxiety disorders (Arch et al., 2016). A meta-analysis found that many therapeutic strategies that promote psychological flexibility are seen in both ACT and CBT, including mindfulness,

acceptance, and defusion (Levin, Hildebrandt, Lillis, & Hayes, 2012). The Control group in the current study did not report a significant change on body image flexibility. Many of the BI-AAQ items inquire about one's ability to not allow worrying about weight take up too much time or to focus on other plans instead of worrying. The current study supports the idea that distraction may promote an ability to move on from negative body image thoughts, but does not appear to help foster an accepting and flexible orientation toward them.

Body-Image Cognitive Distortions. Another outcome variable of interest in the current study was participants' endorsement of body-image-related cognitive distortions, such as "all-or-nothing" beliefs about weight and "jumping to conclusions" about what other people think. All three groups reported a significant decrease in their endorsement of body-image cognitive distortions; however, a significant interaction between the groups suggested that the extent of improvement differed across groups, with large effects noted for the CR and SC strategies and a small effect for the distraction strategy.

It was hypothesized that the CR strategy would have the greatest impact on body image cognitive distortions (Hypothesis 3c); however, large effects were reported for both CR and SC strategies. The SC group did not formally learn to identify cognitive distortions, yet they improved to a large extent on this measure, similar to the CR group that was explicitly taught how to identify and restructure them. The effect size was technically larger in the CR group than the SC group on this measure ($d = 1.19$, $d = 0.81$, respectively), but both effects are considered "large". Although not hypothesized, the Control group reported a small improvement in the endorsement of cognitive distortions related to appearance. However, upon reviewing the literature, it appears as though distraction can impose a change in not only affect, but cognitive patterns as well. For example, one study found that socially anxious individuals who engaged in

a distraction task following a 10-minute speech actually reported changes in cognitive patterns, including decreases in the strength of their negative beliefs (e.g., “people think badly of me”) (Wong & Moulds, 2009). Kocovski, MacKenzie, and Rector (2011) found that, one week after a 3-minute impromptu speech, students who had received a 10-minute guided distraction task after the speech reported more positive thoughts as compared with those who received a 10-minute guided rumination. The current study supports the idea that distraction techniques, in allowing for a shift in attention away from negative body image thoughts, may actually allow for a slight change in the content of these thoughts as well.

All three strategies were helpful in reducing the degree to which participants endorsed distorted thinking about their bodies, but the CR and SC strategies produced significantly greater improvements. This is a particularly important result given the research highlighting the role of cognitive distortions, such as “all-or-nothing” thinking, as a moderator of the relationship between depression and BMI (Antoniou, Bongers, & Jansen, 2017; Dove, Byrne, & Bruce, 2009). Specifically, individuals who endorsed a dichotomous thinking style tended to display similar levels of depression regardless of the degree to which they were overweight or obese (Dove, Byrne, & Bruce, 2009). For an individual who possesses a tendency to think in a “black and white” manner, any deviation from an “acceptable” body can lead to negative emotions, regardless of their objective body size. Such data offer alternative explanations for null findings between objective weight and body image, and also underscore the potential value of working on dichotomous thinking and other body image distortions in combating negative body image in individuals with higher body weight. Restructuring distorted thoughts, being compassionate in the face of distorted thinking, and (to a lesser extent) distracting oneself away from cognitive

distortions were all helpful ways to reduce the degree of endorsement of these types of rigid and polarized thinking around body weight.

Objectified Body Consciousness and Surveillance. The current study also examined the effect of the thinking strategies on body surveillance, the degree to which participants monitor their bodies in an objectified manner (e.g., how often they think about how they look in their clothes, or how often they compare themselves to others). In contrast to the hypotheses that the CR and SC groups would report greater improvements on this measure as compared with the Control group (Hypothesis 3d), the findings indicated that all three groups significantly improved the extent to which they monitored their appearance in an objectifying manner. Consistent with the hypothesis, the CR and SC strategies had comparable and large effects. The distraction strategy had a moderate effect. Therefore, the CR, SC, and distraction techniques appear to have promoted a reduction in body surveillance for women with higher body weight and have body image concerns. These findings regarding body surveillance are important given the mediating role of body surveillance in the relationship between self-weighing and negative body image (Mercurio & Rima, 2011). The current findings provide additional support for the idea that reductions in objectified body surveillance may mitigate the impact that regular weighing has on body dissatisfaction, with the exception that the Control group reported a reduction in body surveillance but not in global negative body image at follow-up. Although it would be logical to parallel the notion of body surveillance with body image behaviours such as body checking, there is very little conceptual overlap between the two terms. However, examining the effect of the CR and SC strategies on body avoidance and checking is an important next step for future studies, as these are considered to be important behavioural mechanisms in maintaining body dissatisfaction (Fairburn, 2008)

One empirical investigation in the literature further delineates the impact of distraction on objectified body consciousness (Cattarin, Thompson, Thomas, & Williams, 2000). In this study examining the impact of distraction on body image, participants were asked to watch a television commercial after being randomly assigned to receive instructions asking them to: i) attend to the people and how they compare to you (comparison); ii) attend to the products and how they are packaged (distraction), and iii) pay attention because you will be asked questions about it later (neutral). Participants in the comparison condition reported a greater degree of comparison than those in the distraction condition. However, the instructional prompts had no impact on the number of appearance-related stimuli participants recalled. For example, those in the distraction group picked up on the same degree of information related to the people in the commercial as did those in the comparison condition. These findings suggest that individuals who are employing distraction may still absorb the same appearance-related information from their surroundings, but re-focusing on a task that is unrelated to said information may disrupt any habitual engagement in body-related surveillance, including engaging in comparisons with others.

Efficacy of Strategies on Self-Esteem vs Self-Compassion

The current study examined the impact of the strategies on state self-esteem. It was hypothesized (Hypothesis 3e) that the CR and SC strategies would produce a more significant impact on self-esteem as compared with the Control strategy. This hypothesis was partially supported, as all of strategies resulted in significant improvements in self-esteem from baseline to follow-up. The CR strategy produced a large effect, whereas the SC and Control strategies produced a moderate effect. At follow-up, the CR and SC groups were both significantly higher in self-esteem as compared with the Control group, even though the Control group significantly increased in state self-esteem from baseline to follow-up. It is important to note that the SC

group and Control group were significantly different in self-reported self-esteem at baseline, whereby the SC group reported having significantly higher self-esteem at baseline as compared with the Control group. This difference was not detected in the preliminary analyses of group differences at baseline, likely because all three groups were included in the analyses. This statistical limitation makes sense of the finding that the SC and Control groups reported the same magnitude of improvement since baseline, yet they differed on self-esteem at follow-up.

The primary discrepancy between the results on the SCS and the SSES is that the Control strategy resulted in significant improvements in self-esteem scores, but not self-compassion scores. This finding backs a distinction between these two conceptualizations of “healthy” self-perception. Although there is conceptual overlap between self-esteem and self-compassion, theoretical papers highlight that the development of self-compassion does not rely on being above average or on judging one’s worth against that of others (Neff, 2003a). Indeed, research has found that self-compassion, in comparison to self-esteem, predicts more stable feelings of self-worth and is less dependent on outcomes of achievement (Neff & Vonk, 2009). As mentioned in the introduction of this thesis, self-compassion was also associated with less social comparison and public self-consciousness (Neff & Vonk, 2009). Self-esteem has been positively associated with body image flexibility and negatively associated with eating disorder pathology; however, a recent study found that it does not contribute uniquely to these variables when self-compassion is a simultaneous predictor in analyses (Kelly, Vimalakanthan, & Miller, 2014). Therefore, while distraction strategies may increase self-esteem in body dissatisfied individuals with higher body weight, they do not have the same effect on self-compassion for these individuals. Increases in feelings of self-worth in the Control group are more likely to be associated with comparisons and self-consciousness, which are also associated with negative

body image. The CR and SC groups reported increases on both self-esteem and self-compassion in the current study. Based on the theoretical differences between self-esteem and self-compassion, these enhanced feelings of self-worth are more likely to persist despite ongoing disappointing experiences or exposure to imperfections.

In light of the above interpretation, it is relevant to make mention of the criticisms surrounding the use of the SCS in conjunction with other psychological measures. Researchers have posited that the affectively-valenced SCS may not correlate appropriately with the neutral content of other psychological measures (Daye, Webb, & Jafari, 2014). Although self-compassion is conceptualized as a psychological variable that would theoretically interact with numerous correlates and risk factors (e.g., internalization of sociocultural appearance norms), a statistical association between them may not be identified unless these factors are accompanied by an awareness of emotional suffering. In the case of the current study, this assessment consideration may account for discrepancies between the outcomes of self-compassion and self-esteem (which is much more neutrally-valenced in tone) to some extent.

Strategy Feedback

Study participants were asked for their feedback on the training session and their practice of the strategy. There were no differences between the groups' perceptions of how well their assigned strategy would work for them. This result suggests that the Control group believed that they were learning a credible and helpful strategy, which provides further support that the significant differences observed between the Control group and the CR and SC groups are due to the active therapeutic content of the CR and SC strategies rather than the expectation that the strategies will be helpful. There were no significant differences between the groups on how successful participants reported being at practising the strategy. This finding suggests that the CR

and SC strategies were equally as practical and easy to use on a daily basis as distraction was. Given that avoidant coping strategies are known to be a default means of coping with numerous unpleasant experiences, including body image, this finding really points to the acceptability and feasibility of implementing CR and SC strategies even after only one session of training.

Interpretations of the Current Findings

In summary, single sessions of training in CR or SC in the current study produced significant improvements in global body image, body-image-related cognitive distortions, self-compassion, body-image flexibility, objectified body surveillance, and state self-esteem a week after the training sessions. The improvements in the SC and CR groups were statistically greater than those in the Control group on measures of global body image, self-compassion, and cognitive distortions. On the other outcome measures, the interactions between strategy condition and time were non-significant. This finding may have been because the improvements in the Control group were large or because the gains observed in the active strategies (CR and SC) were not sufficiently large on these measures. Post-hoc analyses suggest that, for the most part, the Control group was demonstrating significant improvements across some measures, which may have masked expected group differences between this group and the CR and SC groups. There were no statistically significant differences between the CR and SC groups on any outcome variable, with the exception of CR training producing significant changes to body dissatisfaction immediately after the session whereas the SC training did not. The two groups demonstrated similar large effect sizes for self-compassion, cognitive distortions related to body image, and body surveillance. The CR strategy had a larger effect size than the SC strategy on self-esteem, whereas the inverse was true for body image flexibility. The Control group reported statistically significant improvements on state affect and body satisfaction/dissatisfaction

immediately following the training session. The Control strategy also produced small to moderate effects for self-esteem, cognitive distortions, and body image surveillance at one-week follow-up. In examining a broader literature, there is additional information that aids in interpreting the present study's findings.

The most important finding in the current study is that the CR and SC groups affected negative body image to a greater extent than the Control group. Consistent with many of the study hypotheses, the CR and SC groups reported improvements across outcome measures. However, it was not expected that the SC strategy would do as good of a job at targeting cognitive distortions as the CR strategy, nor was it predicted that the CR strategy would produce a comparable shift in body image, self-compassion, and body image flexibility as the SC strategy. This finding highlights that both strategies were helpful in addressing these mechanisms, either directly or indirectly, and thus may have a comparable effect on negative body image but through different approaches. Challenging body image thoughts and being compassionate in response to body image thoughts can both improve self-compassion, reduce distorted thinking, and improve psychological flexibility within the area of body image.

In light of the similar impact of CR and SC strategies on underlying cognitive processes, it is important to consider the common factors that overlap across all three strategies. In order to control for participant expectancy and for therapist attention, all three strategy training protocols offered some psychoeducation around the nature of negative body image thoughts, including their automaticity and the impact they have even if they are not immediately conscious. Identifying and reattributing the meaning of body image thoughts (e.g., let's look at what your mind tells itself when you're experiencing negative body image) promotes a third person objectivity, whereby individuals gain perspective on their cognitive patterns by simply

acknowledging that their thoughts are not who they are and are not always portraying reality. This technique is explicitly used in CBT and is an informal component in mindfulness and compassion-based approaches (Beck, 2011; Neff, 2013; Shapiro, Carlson, Astin, & Freedman, 2006). Thus, improvements following training in all three strategies may be attributable, at least in part, to this psychological technique. This overlap in the instructions between the CR and SC conditions was difficult to avoid because the strategies partly overlap conceptually, and thus could not be avoided no matter how the strategies were packaged or delivered (Wolgast, Lundh, & Viborg, 2013). However, the psychoeducation and third person objectivity would not typically be a part of a distraction task. For example, an individual distracting from body image thoughts in the real world would not necessarily be privy to the knowledge that their thoughts were simply mental activities and can be identified and examined. In spite of the partial conceptual and operational overlap, the instructions differ significantly in focus, and thus allow for the current research questions to be rigorously tested within a laboratory setting. Future studies can vary the distraction instructions in order to clarify to what extent psychoeducation and the identification of thoughts improved participants' response on outcome variables.

Distraction was initially selected as a Control strategy but resulted in small to moderate improvements in self-esteem, body image cognitive distortions, and body surveillance. The distraction strategy was chosen because it simulates what a person may typically do to manage their body dissatisfaction. Thus, distraction may have impacted certain outcomes because it is likely a well-rehearsed strategy (for responding to body image thoughts and other negative internal experiences) that has some support for short-term impact (Etu & Gray, 2010). Research also points to the use of distraction as an antidote to rumination over body image thoughts (which is known to worsen body dissatisfaction; Etu & Gray, 2010). Furthermore, it may be that

some of the improvement reported by the Control group was due to common factors, including therapist contact and the perceived helpfulness of receiving a seemingly credible strategy. The CR and SC groups are vulnerable to these factors as well. Despite the impact of distraction on some outcomes in the current study, the CR and SC strategies significantly outperformed distraction on the majority of the dependent variables, including negative body image.

Perspectives on the Current Findings from the Literature on Emotion Regulation

The strategies tested in the current study were initially employed as cognitive strategies, and yet cognitive reappraisal, distraction, acceptance-based approaches such as self-compassion are commonly cited in the context of emotion regulation. Research has identified contextual factors that affect the comparative efficacy of emotion regulation strategies. One study explicitly examined how negative emotion states influence the use of regulatory strategies and found that it is easier to use self-compassion during periods of intense depressed mood than cognitive appraisal (Diedrich, Grant, Hofmann, Hiller, & Berking, 2014). This finding may be due to intense affective states interfering with the ability to activate rational or positive thinking, making these states more difficult to change using cognitive restructuring than self-compassion (Sheppes & Meiran, 2007; Sheppes, Scheibe, Suri, & Gross, 2011). It has also been hypothesized that, for these same reasons, distraction can be easier to use during periods of depressed mood than cognitive reappraisal (Sheppes & Meiran, 2007; Sheppes, Scheibe, Suri, & Gross, 2011).

In a similar vein, an important distinction has been made between regulation strategies that are antecedent-focused and response-focused that may aid in understanding the differential outcomes between CR and SC with distraction (Gross, 2008). Antecedent-focused strategies, such as cognitive reappraisal, occur before a full emotional response is produced. There is evidence that antecedent-focused strategies are more effective than response-focused strategies

(e.g., suppression) (Gross, 2006). This finding is logical when one considers that regulating an emotion before it has fully escalated would be more adaptive than attempting to shut down a response that has already generated difficult emotions. Interestingly, SC and CR are both considered antecedent-focused strategies, whereas distraction does not fall into either category (Gross, 1998). Research has shown that distraction is effective even when initiated late into the employment of a negative emotion state, presumably because it involves weakening the contents of emotionally-provoking events by integrating other, less emotionally-charged, input. By contrast, cognitive reappraisal was found to be less effective when initiated late into an emotional reaction, indicating that there may be a “point of no return” for antecedent-focused strategies. The adoption of a new cognitive perspective of emotionally-provoking events involves continued focus on the event and may therefore require overriding a previously formed tendency of identifying with the emotional content (Sheppe & Meiran, 2007).

The culmination of this research seems to indicate that antecedent-focused strategies, like CR, are more effective when used under appropriate conditions (i.e., prior to a full emotional response being activated by an event). However, if the triggering event has produced a full emotional response, a strategy like SC or distraction may actually serve the individual better because of their ease of use when negative emotions are elevated. Furthermore, if an emotionally-triggering event has already taken place and an individual is feeling stuck in the emotion, CR and SC may promote a focus on the negative event and thoughts which can heighten distress, whereas distraction can still be useful at any time during emotion generation. This line of research provides interesting insight into why distraction may have been more helpful for participants to improve body image related outcomes like body image cognitive distortions and objectified body surveillance than what was originally hypothesized.

A consideration in the current study is how participants in the Control condition applied distraction. Participants in the control group could have included positively- and/or negatively-valenced activities when writing about a typical day, which would have affected how they felt after the session. Despite instructions to focus on a typical day that would not evoke strong emotions, some Control group participants indicated that it was sad to look at how few activities they were engaged in throughout their day or that they noticed how body image issues come up subtly throughout their day in ways they were not expecting. Some participants in the Control group noted that during the writing task, they became excited about other domains of their lives that were fulfilling in some way despite their weight, and actually lead them to feel grateful about areas in their lives that they felt more self-actualized in. Research has shown that the type of distraction task employed for managing emotions can affect its effect on mood and anxiety (Drake & Winner, 2012). The reports of participants experiencing an activation of various emotions in the Control task invites the possibility that the outcomes of the distraction condition may have been biased by other factors.

Limitations

It is acknowledged that certain patient demographics were underrepresented in the current study sample, and hence the degree to which findings can be generalized beyond the current sample is restricted. The current sample was female and between the ages of 18 and 65 years. There was strong rationale for selecting this population, and yet there is a large literature on the different body image experiences of men, youth, and older adults (Demarest & Allen, 2000). The current sample was very culturally diverse, which is important for the generalizability of the conclusions given documented ethnic differences in body image (Demarest & Allen, 2000). Furthermore, only 81 of the 129 participants that responded to the study participated.

While this response rate (62.7%) is quite high, it is important to consider that people who opted not to participate in the study may differ from those who did participate, especially for a community sample where motivations for participation can vary significantly.

The current study did not assess for the presence of a current eating disorder. For individuals with BN or with Atypical AN (where the criteria regarding having a significantly low weight has not been met but all other symptoms are present; APA, 2013), it is widely accepted that the overvaluation of shape and weight is a hallmark of the disorder, and that active bingeing and purging must be addressed prior to negative body image (Fairburn, 2008). It is well established that individuals with BED show more psychological distress than individuals with obesity that do not binge (Schwartz & Brownell, 2000). Although body image distress is not included as an explicit criterion in the diagnosis of BED in the DSM-5 (APA, 2013), there is a burgeoning literature supporting the idea that negative body image is an important factor in BED (Telch & Stice, 1998). Individuals with BED, compared with people of a similar BMI who do not present with an eating disorder, report greater weight and shape concerns, body dissatisfaction, feelings of fatness, fears of gaining weight, distress with exposure to one's body, and body avoidance (Eldredge & Agras, 1996; Spitzer et al., 1993; Telch & Stice, 1998). Individuals with BED have similar shape and weight concerns irrespective of weight status and degree of obesity, and thus it had been argued that body dissatisfaction stems more from the eating disorder pathology than from higher body weight (Eldredge & Agras, 1996). Participants who may have had BED in the current sample would likely be at higher risk for negative body image, given their eating disorder, and may require treatment of the eating disorder (i.e., to stop binge eating) prior to experiencing improvements in their body image.

The majority of the study's limitations reflect the fact that the current study was designed as a single-session experimental paradigm. For example, the exclusive focus on immediate and short-term (1 week) effects of the strategies precludes drawing any conclusions regarding the long-term efficacy of these strategies. Given that SC strategies did not improve in body dissatisfaction and affect immediately following the training in the current study but then did one week later, it is important to conduct studies with longer term follow-up. This is particularly so given that short-term CBT interventions are on the rise (Mignogna et al., 2014). With regard to the choice of strategies, future research should aim to look at default means of coping with body image, and ideally strategies would be tested in participants' natural environment (e.g., using body image triggers that are salient and common for them).

The assessment of change in the current study presents a number of limitations. First, self-report questionnaires were used to assess the impact of the strategies, which allowed for the assessment of subjective experience, but can be subject to bias. One potential issue is the difficulty individuals have in rating emotional phenomenon. For example, as reviewed previously, participants in the current study noted that their distraction from or denial of negative body image thoughts prevented them from accurately rating them before the training session. The issue of confounding items that measure psychopathology with items that measure emotion is also a consideration in this study.

A further limitation of the current study pertains to the development and delivery of the strategy training protocols. The protocols for the training sessions used in the current study were developed by the principal investigator (L. David). These single-session protocols were informed by Thomas Cash's (2008) Body Image Workbook as well as self-compassion resources offered through Kristin Neff's website and workshop. Given that self-compassion is a relatively newer

approach, a protocol had not yet been developed for its application to body image. Previous studies using self-compassion for body image or for eating disorders referred to her resources as well (Albertson et al., 2014; Kelly & Carter, 2015), but these meditations and exercises were not specifically geared to the presenting problem, and thus these could not be used. Although the PI has extensive training in cognitive restructuring and working with body image, she does not have extensive training in self-compassion. She did attend a self-compassion workshop conducted by Dr. Neff, but independent proficiency in self-compassion approaches requires, at minimum, attendance at intensive workshops and regular feedback from experts. However, it could be argued that the use of a non-expert therapist serves to enhance the external validity of the study, given that most members of teams are not SC experts. Another potential limitation is that the PI was also the study therapist and delivered all of the training sessions across all three strategies. This could have contributed to therapist contamination, whereby the therapist unintentionally teaches skills from one strategy to participants in another group.

Another important limitation concerns research showing that, despite instructional sets that facilitate the use of other coping styles, many participants in research studies will still adopt and use a coping technique that is automatic and may be rehearsed for them. There is emerging research suggesting that self-regulation may in fact also happen on the automatic level (Fitzimons and Bargh, 2004). Higher psychological processes, such as following norms or goal achievement, can be activated in response to a triggering event without one's awareness and influence cognitions, emotions, and behaviours. Automatic emotion regulation, similar to conscious regulation, can involve changes at different stages of the emotional process, including attention deployment, cognitive interpretation, or modulation of emotional reaction, and can effectively change the experiential, psychophysiological, or behavioural aspects of the emotion

(Gyurak, Gross, & Etkin, 2011). These studies only posit how automatic emotion regulation may work: they do not prove its existence. Studies have shown that, when participants are instructed to use specific strategies, they have a hard time doing so (as reviewed in Gyurak, Gross, & Etkin, 2011) and instead engage in automatic emotion regulation (Berkman & Liberman, 2009; Williams & Bargh, 2007). These studies argue that instructions for regulation of thoughts and emotions, like those used in the present study, are actually unlikely to exclusively elicit the intended strategy. This is an important consideration, particularly because participants in the current study only received a single session of training in the assigned strategy and thus were not presented with the opportunity to fully rehearse the new strategy.

On a similar note, the current study did not control for participants' seeking treatment outside of the strategies. It was evident that some people had previously undergone or were undergoing psychotherapy during the course of the study. Some individuals were recruited from private practice psychotherapy clinics or eating disorder support groups. This presents a threat to the internal validity of the study, as participants in the groups may have been receiving other interventions throughout the study or may have received psychotherapy interventions previously that would have allowed them to apply different strategies to body image or to be more well-practiced in the strategies taught to them.

Conclusions and Future Research

Negative body image, including the thoughts and emotions associated with an active dislike of one's physical appearance, undoubtedly affects individuals across the weight spectrum (Olmsted & McFarlane, 2004). Research finds, however, that individuals with higher body weight are particularly impacted by body dissatisfaction (Friedman & Brownell, 1995; Johnson et al., 2017). The association between negative body image and obesity can become a self-

perpetuating cycle, as body dissatisfaction has been linked to various forms of psychopathology, including disordered eating, and has been associated with weight gain over time (Farrell, Shafran, & Lee, 2006; van den Berg & Neumark-Sztainer, 2007). This study represents a novel attempt to apply self-compassion and cognitive restructuring outside of a CBT protocol for the purposes of improving negative body image in higher body weight individuals. Furthermore, the current study is the first study to directly compare the impact of training in SC and CR on body image, as well as to compare them to a control strategy that is purported to mimic the default means of coping with body image.

The results of the current experimental study suggest that although distraction may be helpful for immediately improving body dissatisfaction and body-related affect, both CR and SC have a significant advantage over distraction for managing negative body image over the course of one week. Single session training in CR or SC appears to help women with higher body weight to disengage from cognitive distortions, to reduce the way in which they monitor their bodies in an objectified manner, and to flexibly approach their negative body image thoughts as to not let them run their day-to-day lives. One hour of training in these two skills-based approaches also fostered a significant increase in self-compassion and self-esteem one week later. Cognitive restructuring and distraction were significantly better than SC only in facilitating an immediate improvement in body dissatisfaction after being weighed. The significant changes produced by the CR and SC conditions were moderate to large in size; an impressive feat for a one hour session. The distraction strategy was designed to be a control in the current study, but was actually found to lead to improvements in certain outcome measures. Learning to distract from one's thoughts created small, but significant, reductions in the women's endorsement of

body-image cognitive distortions and objectified body surveillance, and fostered self-esteem one week after the training.

The high recruitment rate ($n = 81$ over 12 months) and high retention rate in the current study (94.9% after the session), as well as the feedback provided by many participants, attest to the interest in having these services provided. The women in the current study, all of whom had a higher body weight and reported dissatisfaction with their bodies, reported how validating it was to learn strategies to manage negative body image. Many participants spontaneously expressed an interest in returning for another session, and were disappointed to learn that the study only involved a single training session. The high recruitment, strong retention, and positive informal feedback speak to the acceptability and feasibility of conducting these single session trainings in various healthcare or private settings.

The current study was experimental in nature, and it is important that the conclusions drawn remain within the parameters of the study design. In this case, the main objective was to identify which strategy or strategies were helpful in improving body image following being weighed. In this capacity, the application of the current results has real world and far-reaching implications for clinical and non-clinical populations. For example, although weighing oneself is distressing for many people, regular self-monitoring of weight (i.e., weekly weighing) is a key component of evidence-based treatments for disordered eating, such as BED which is often associated with higher body weight (Fairburn, 2008). Routine weighing (either self-weighing or by a health care professional) is recommended because it allows for a check-in around how weight responds when binge eating is addressed and also allows for the collection of data that may challenge distorted beliefs (e.g., the idea that certain foods are “bad” and result in endless increases in weight; Waller & Mountford, 2015). Furthermore, regular self-monitoring of weight

also serves as a body image exposure, whereby individuals habituate to seeing the number and, with time, may learn that this number fluctuates naturally and is not defined by every item of food consumed (Waller & Mountford, 2015). Thus, although stepping on the scale can be stressful, is it not adaptive to avoid it altogether. However, regular collaborative weighing is introduced in the first few sessions of treatment for all eating disorders (e.g., Fairburn, 2008; Laliberte, McCabe, & Taylor, 2008), which is long before patients receive information about how to manage negative body image. The current study finds that, if the goal is to make being weighed more tolerable in the moment for body dissatisfied individuals with higher body weight, a one-hour session of cognitive restructuring or distraction would buffer the impact of this trigger on body image and on one's immediate emotional response. In contrast, when the intent is to produce effects that, with continued practice, will last a week or perhaps longer, cognitive restructuring and self-compassion are equally beneficial, whereas distraction is not recommended. Offering a single session of training in CR or SC strategies could offer some support for patients to manage ongoing body dissatisfaction prior to receiving a more comprehensive body image intervention.

Behavioural weight loss programs also typically involve a recommendation for regular weighing, with the recommendations varying from daily to once per week (NICE 2014; 2015; Zheng et al., 2016). Bariatric surgery patients are instructed to engage in weighing no more than once per week (Odom et al., 2010). In these settings, regular weighing is encouraged because it allows for a routine check-in around progress toward weight loss goals and may signal when weight loss is too steep, weight loss is plateauing, or weight regain is starting (e.g., Apple, Lock, & Peebles, 2006). Thus, strategies such as the ones taught during the single session CR or SC training sessions could be helpful in managing the stress associated with getting on the scale

every week. However, the use of CR or SC strategies in the context of weight loss was not examined in the current study. In light of results showing that adjunctive CBT was not helpful for improving body image above and beyond the impact of a behavioural weight loss program (Ramirez & Rosen, 2001), it is not assumed that the current findings regarding the impact of CR or SC would generalize in the context of a behavioural or surgical weight loss program. However, this is an important empirical question that can be tested in future studies.

The current findings provide an impetus to pursue this line of research to continue to help women with higher body weight feel less distressed in their own bodies. With respect to next steps, it would be beneficial to determine whether a higher dose of the training sessions corresponds to further benefits. The present study limited the strategy training to only one hour, but future studies should examine whether the effect of the training is augmented with spreading the material out between more sessions or with booster sessions to reinforce practice with the skills. The single-session paradigm employed in the current study is a large departure from Cash's 8-step CBT program (2008) for body image and from Neff's 8-week MSC course for enhancing self-compassion. Of course, body image issues are complex, and will likely warrant more than a single session for many individuals. However, low-intensity interventions have emerged from growing pressures for brief empirically-supported therapeutic treatments that can be easily delivered in tertiary care and community settings where staff numbers and budgets are restricted (Bennett-Levy, Richards, & Farrand, 2010). These have become a mainstay means of increasing access to psychological treatments for people experiencing mild to moderate psychiatric symptoms. Low-intensity interventions are typically used as a precursor or adjunct to more conventional psychotherapy protocols, but they can differ dramatically in delivery, degree of input from a healthcare provider, and content (Bennett-Levy, Richards, & Farrand, 2010). The

low intensity format has been employed with good outcomes for mood disorders (Richards, 2010), anxiety disorders (Titov, Andrews, & McEvoy, 2010), and chronic insomnia (Vincent & Holmqvist, 2010). By examining the optimal dose of CR and SC strategies in future studies, additional commentary on the potential benefit of these skills in a low-intensity format for individuals higher body weight who experience body dissatisfaction.

Further research should also systematically assess the short- and long-term effects of the single-session training in CR and SC for body image in individuals with higher body weight. It would also be interesting to examine the longer-term effects of a distraction intervention, as its impact on cognitive distortions, body surveillance, and state self-esteem were unexpected findings of the current study and are not predicted to last much beyond the week. With regard to the selection of strategies, future research should continue to examine default means of coping with body image. The current study employed distraction given correlational data between negative body image ratings and typical coping strategies, no studies have examined how non-clinical populations, with or without higher body weight, attempt to manage body image distress in the moment. Furthermore, ideally strategies for improving body image would be tested again, but in participants' natural environment (e.g., using body image triggers that are salient, relevant, and common for them). It may be that, for some people, weight is not as valued as body shape. Concerns regarding body shape would be more likely to become activated in response to tight fitting clothes rather than when the scale shows a higher number. One proposed study design to accomplish this aim is to examine the use of these strategies outside of the laboratory. For example, the training sessions could be provided to individuals enrolled in CBT for BED, who have yet to receive body image treatment, after they are prompted to think about a prominent

body image trigger for them. These future changes to study methodology would determine the external generalizability of the current findings.

Although the power in the current study was sufficient for the analyses conducted, the use of a larger sample size in future studies would allow the identification of factors that moderate the efficacy of specific strategies. For example, the superiority of one strategy over another might depend on the anticipated ability to successfully utilize these skills. An interesting variable to test with more statistical power would be whether increases in self-compassion, rather than self-esteem, predict improvements in body image in light of a new but growing body of literature challenging the notion that self-esteem is a strong protective factor against certain forms of maladaptive coping (Breines & Chen, 2012; Neff et al., 2007). Answers to these questions have important implications, because, to date, many prevention programs for eating disorders have focused on cultivating self-esteem (e.g., McVey, Davis, Tweed, & Shaw, 2004). The present results indicate that fostering self-compassion, especially among females with higher body weight, might be a more stable means by which to improve body image (Crocker & Park, 2004).

Research from other fields has also found that the adaptiveness of specific strategies for managing negative emotions and thoughts depends on the situational context (Bonanno, 2001). For example, in treating anxiety, problem solving may not be an adaptive strategy when facing an imagined or uncontrollable situation, and conversely cognitive restructuring may not be an adaptive strategy when confronted with a real and solvable problem. As previously reviewed in the current study, it is also purported that different strategies may be more appropriate depending on their temporal proximity to the body-image trigger and subsequent emotional response (Gross, 2008; Sheppe & Meiran, 2007). It may be most adaptive to be able to flexibly move

between coping strategies in accordance with these factors. Only a small number of studies have specifically tested this flexibility hypotheses in the context of emotion regulation (e.g., Bonanno, Papa, Lalande, Westphal & Coifman, 2004), but those that have been conducted identified promise for its use. In keeping with this context-specificity and flexibility hypothesis, improving the efficacy of interventions for body image in individuals with higher body weight may not lie with shifting the focus completely to the use of only one coping strategy, but rather with training individuals on a range of skills and providing practice with implementation across different scenarios to identify what strategy-context pairing is most helpful. The current finding that both CR and SC strategies improved body image in this population despite their divergent theoretical underpinnings make both of these approaches suitable candidates for a combined, flexible approach.

The findings of the current study play into a broader conversation about how healthcare providers can optimize approaches to the physical and mental health of individuals with higher body weight. For individuals with higher body weight, the research clearly shows that the promotion of weight loss through means of dietary change and physical activity is rarely successful long-term without surgery (Colquitt, Clegg, Loveman, Royle, & Sidhu, 2005). Meta-analytic results of behavioural weight loss have identified a reliable pattern of individuals losing significant amounts of weight initially and gaining it back over time (Anderson, Konz, Frerich, & Woof, 2001). As reviewed in the current dissertation, negative body image can develop as a result of numerous influences that are unrelated to actual weight, and yet individuals who are or who have been overweight or obese experience a higher prevalence of body dissatisfaction (Annis, Cash, & Hrabosky, 2004). While it has been argued that negative body image may be a motivating factor to prompt healthful behaviour change (Heinberg, Thompson, & Matzon, 2001),

studies find that weight loss improves body image to a relatively small degree and that these improvements are highly sensitive to any weight regain (Foster et al., 1997). Furthermore, the literature shows that body image treatment as an adjunct to weight loss programs does not help to safeguard against this worsening of body image with weight fluctuations (Ramirez & Rosen, 2001). Even following sustained weight loss from bariatric surgery, body image does not reach the levels of the general population and new body image concerns are typically introduced, such as those around excess skin (Dixon, Dixon, & O'Brien, 2002; Lyons, Meisner, Sockalingam, Cassin, 2014).

The Health at Every Size (HAES) movement has emerged as a response to these repetitive, unsuccessful efforts to somehow change the narrative for individuals with higher body weight. The basic foundation of HAES teaches the natural diversity in body weight and shape, the dangers of excessive dieting and weight control behaviours, and the importance of responding to the body's biological cues (Robison, 2005). While the HAES movement has been under criticism for neglecting a number of public health factors (Penney & Kirk, 2015; Peter, Wyatt, Donahoo, & Hill, 2002), it is commended for emphasizing a focus on letting go of the fallacy of control over weight and on a commitment to working toward healthy eating and exercise and tolerating the natural body weight that comes with those behaviours. Equipped with this information, it is argued that individuals with higher body weight might be better able to move toward behaviours that will benefit their physical health as well as self-acceptance (Robison, 2005). Outside of the HAES movement, intervention efforts have recently started to shift to targeting negative body image and optimizing physical health in an integrated fashion by integrating crucial information about the biological influences on eating and weight (e.g., Laliberte, McCabe, & Taylor, 2009). The merit of a shift toward programs designed to address

excessive weight with a promotion of healthy behaviours for participants of all shapes and sizes is being recognized, especially for youth who are in the processing of developing attitudes toward their body and eating (Neumark-Sztainer et al., 2010). The identification of effective strategies for individuals with higher body weight to manage body dissatisfaction would be a central requirement for this theoretical shift to occur in practice.

Taken together, the results of the current study suggest that CR and SC are promising strategies for improving body image, at least in the short-term, among women with higher body weight. From a broader perspective, the data from the current study offer a starting point from which to develop further empirical studies or even clinical trials, with the end goal of developing efficacious psychosocial interventions aimed at improving the body image of higher body weight individuals. This study is part of an ongoing effort to preserve the mental health of people with higher body weight. At the very least, the current study participates in an ongoing dialogue challenging the outdated notion that, for individuals with higher body weight, working toward body-acceptance and striving for physical health are mutually-exclusive processes.

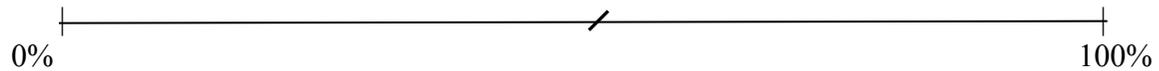
Appendices

Appendix A

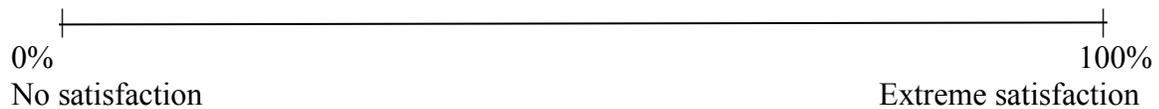
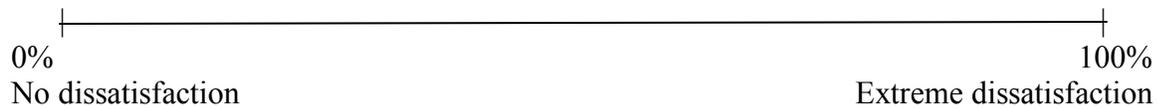
Visual Analogue Scale for Body Satisfaction and Dissatisfaction

Instructions: Please respond to the following item by placing a mark along the scale.

For example:



Please rate how you feel about **your body** on the following scale by placing a mark on the line below:



Appendix B

Positive and Negative Affect Scale - State Version

Instructions: This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way **about your body or appearance right now**, that is, **at the present moment**. Use the following scale to record your answers.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

inspired	
upset	
excited	
blameworthy	
strong	
guilty	
scared	
alone	
happy	
proud	

loathing	
interested	
ashamed	
fearless	
helpless	
at ease	
confident	
disgusted	
amazed	
angry at self	

Appendix C

Body Shape Questionnaire - 16 Item Version

We should like to know how you have been feeling about your appearance over the **PAST FOUR WEEKS**. Please read each question and circle the appropriate number to the right. Please answer all the questions.

	Never					
		Rarely				
			Sometimes			
				Often		
					Very often	
						Always
OVER THE PAST <u>FOUR WEEKS</u>:						
1. Have you been so worried about your shape that you have been feeling you ought to diet?	1	2	3	4	5	6
2. Have you been afraid that you might become fat (or fatter)?	1	2	3	4	5	6
3. Has feeling full (e.g. after eating a large meal) made you feel fat?	1	2	3	4	5	6
4. Have you noticed the shape of other women and felt that your own shape compared unfavourably?	1	2	3	4	5	6
5. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)?	1	2	3	4	5	6
6. Has being naked, such as when taking a bath, made you feel fat?	1	2	3	4	5	6
7. Have you imagined cutting off fleshy areas of your body?	1	2	3	4	5	6
8. Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?	1	2	3	4	5	6
9. Have you felt excessively large and rounded?	1	2	3	4	5	6
10. Have you thought that you are in the shape you are because you lack self-control?	1	2	3	4	5	6
11. Have you worried about other people seeing rolls of fat around your waist or stomach?	1	2	3	4	5	6
12. When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)?	1	2	3	4	5	6

13. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape? 1 2 3 4 5 6
14. Have you pinched areas of your body to see how much fat there is? 1 2 3 4 5 6
15. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)? 1 2 3 4 5 6
16. Have you been particularly self-conscious about your shape when in the company of other people? 1 2 3 4 5 6

Appendix D

Objectified Body Consciousness Scale: Surveillance Scale

For each item, please circle the answer that best characterizes your attitudes or behaviours.

- 1 = Strongly Disagree
- 2 = Moderately Disagree
- 3 = Slightly Disagree
- 4 = Neither Disagree Nor Agree
- 5 = Slightly Agree
- 6 = Moderately Disagree
- 7 = Strongly Agree

I rarely think about how I look.	1	2	3	4	5	6	7
I think it is more important that my clothes are comfortable than whether they look good on me.	1	2	3	4	5	6	7
I think more about how my body feels than how my body looks.	1	2	3	4	5	6	7
I rarely compare how I look with how other people look.	1	2	3	4	5	6	7
During the day, I think about how I look many times.	1	2	3	4	5	6	7
I often worry about whether the clothes I am wearing make me look good.	1	2	3	4	5	6	7
I rarely worry about how I look to other people.	1	2	3	4	5	6	7
I am more concerned with what my body can do than how it looks.	1	2	3	4	5	6	7

Appendix E

Body Image Acceptance and Action Questionnaire

Directions: Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following rating scale to make your choices. For instance, if you believe a statement is 'Always True,' you would write a 7 next to that statement.

Never True	Very Seldom True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True
1	2	3	4	5	6	7

- ____ 1. Worrying about my weight makes it difficult for me to live a life that I value.
- ____ 2. I care too much about my weight and body shape.
- ____ 3. I shut down when I feel bad about my body shape or weight.
- ____ 4. My thoughts and feelings about my body weight and shape must change before I can take important steps in my life.
- ____ 5. Worrying about my body takes up too much of my time.
- ____ 6. If I start to feel fat, I try to think about something else.
- ____ 7. Before I can make any serious plans, I have to feel better about my body.
- ____ 8. I will have better control over my life if I can control my negative thoughts about my body.
- ____ 9. To control my life, I need to control my weight.
- ____ 10. Feeling fat causes problems in my life.
- ____ 11. When I start thinking about the size and shape of my body, it's hard to do anything else.
- ____ 12. My relationships would be better if my body weight and/or shape did not bother me.

Appendix F

Self-Compassion Scale

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

0	1	2	3	4	5
Almost never					Almost always

- _____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.
- _____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
- _____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
- _____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
- _____ 5. I try to be loving towards myself when I'm feeling emotional pain.
- _____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.
- _____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
- _____ 8. When times are really difficult, I tend to be tough on myself.
- _____ 9. When something upsets me I try to keep my emotions in balance.
- _____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
- _____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.
- _____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.
- _____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
- _____ 14. When something painful happens I try to take a balanced view of the situation.

- _____ 15. I try to see my failings as part of the human condition.
- _____ 16. When I see aspects of myself that I don't like, I get down on myself.
- _____ 17. When I fail at something important to me I try to keep things in perspective.
- _____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.
- _____ 19. I'm kind to myself when I'm experiencing suffering.
- _____ 20. When something upsets me I get carried away with my feelings.
- _____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.
- _____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.
- _____ 23. I'm tolerant of my own flaws and inadequacies.
- _____ 24. When something painful happens I tend to blow the incident out of proportion.
- _____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.
- _____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

Appendix G

Fears of Self-Compassion Scale

Different people have different views of compassion and kindness. While some people believe that it is important to show compassion and kindness in all situations and contexts, others believe we should be more cautious about showing it too much to ourselves. We are interested in your thoughts in regard to expressing self-compassion.

Below are a series of statements that we would like you to think carefully about and then circle the number that best describes how each statement fits you. Please use this scale to rate the extent that you agree with each statement:

Don't agree at all 0 1 2 3 4 Completely Agree

1. I feel that I don't deserve to be kind and forgiving to myself	0	1	2	3	4
2. If I really think about being kind and gentle with myself it makes me sad	0	1	2	3	4
3. Getting on in life is about being tough rather than compassionate	0	1	2	3	4
4. I would rather not know what being kind and compassionate to myself' feels like	0	1	2	3	4
5. When I try and feel kind and warm to myself I just feel kind of empty	0	1	2	3	4
6. I fear that if I start to feel compassion and warmth for myself, I will feel overcome with a sense of loss/grief	0	1	2	3	4
7. I fear that if I become kinder and less self-critical to myself then my standards will drop	0	1	2	3	4
8. I fear that if I am more self compassionate I will become a weak person	0	1	2	3	4
9. I have never felt compassion for myself, so I would not know where to begin to develop these feelings	0	1	2	3	4
10. I worry that if I start to develop compassion for myself I will become dependent on it	0	1	2	3	4
11. I fear that if I become too compassionate to myself I will lose my self-criticism and my flaws will show	0	1	2	3	4
12. I fear that if I develop compassion for myself, I will become someone I do not want to be	0	1	2	3	4
13. I fear that if I become too compassionate to myself others will reject me	0	1	2	3	4
14. I find it easier to be critical towards myself rather than compassionate	0	1	2	3	4
15. I fear that if I am too compassionate towards myself, bad things will happen	0	1	2	3	4

Appendix H

State Self-Esteem Scale

To assess how you are thinking right now, please read the following statements. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you right now.

Use the scale below and place the number that describes your thinking in the space beside the statement.

0	1	2	3	4
not at all	a little bit	somewhat	very much	extremely

- ___ 1. I feel confident about my abilities.
- ___ 2. I am worried about whether I am regarded as a success or failure.
- ___ 3. I feel satisfied with the way my body looks right now.
- ___ 4. I feel frustrated or rattled about my performance.
- ___ 5. I feel that I am having trouble understanding things that I read.
- ___ 6. I feel that others respect and admire me.
- ___ 7. I am dissatisfied with my weight.
- ___ 8. I feel self-conscious.
- ___ 9. I feel as smart as others.
- ___ 10. I feel displeased with myself.
- ___ 11. I feel good about myself.
- ___ 12. I am pleased with my appearance right now.
- ___ 13. I am worried about what other people think of me.
- ___ 14. I feel confident that I understand things.
- ___ 15. I feel inferior to others at this moment.
- ___ 16. I feel unattractive.
- ___ 17. I feel concerned about the impression I am making.
- ___ 18. I feel that I have less scholastic ability right now than others.
- ___ 19. I feel like I'm not doing well.
- ___ 20. I am worried about looking foolish.

Appendix I

Depression Anxiety Stress Scales

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g., in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix J

Evaluation of Strategy

1) How *credible* was the explanation of the strategy you practiced? Did it make sense why the strategy you practiced might help to reduce body dissatisfaction?

Not at all	A little bit	Somewhat	Very much	Extremely
0	1	2	3	4

2) Before you tried the strategy, how well did you think it would work *for you*?

Not at all	A little bit	Somewhat	Very much	Extremely
0	1	2	3	4

3) How *successful* were you in practicing the strategy? Were you able to understand the strategy and stay focused while practicing it?

Not at all	A little bit	Somewhat	Very much	Extremely
0	1	2	3	4

4) How *helpful* do you think the strategy you practiced would be in reducing body dissatisfaction if you continued using it? How helpful would it be in improving negative thinking about a stressful situation that made you feel badly about your physical appearance?

Not at all	A little bit	Somewhat	Very much	Extremely
0	1	2	3	4

Appendix K

Telephone Screening Script

(Participant phones in)

Thank you for calling the Healthy Eating and Lifestyle Lab at Ryerson University. My name is _____ and I am a _____ in the lab. Are you calling to inquire about participation in a particular study?

(If they indicate it is the one about body image, continue)

Can you tell me how you found out about the study?

Do you have some time now for me to provide you with some information about the study? You can interrupt me at any point with any further questions you may have. You can use this information to decide whether you wish to proceed with participation or decline participation at this time. Does this sound okay to you?

(If yes, continue)

First, I have some quick questions for you to make sure you are eligible to take part: Are you between the ages of 18 and 65 years of age? Are you a female? Would you be able to travel to Ryerson University for one visit in the next 2 weeks? Do you have access to the Internet?

(If yes, continue)

I also have 16 questions to ask you related to how you feel about your body. This will help us determine whether you will be a good fit for our study. Would you feel comfortable answering them for me over the telephone right now, or would you prefer them to be sent in an email link to you for completion?

→ *(If yes to telephone administration)*

Before I ask these questions, I want to ensure that you know you do not have to answer these questions. This is voluntary, and you can stop this process at any time by just telling me that you do not wish to respond to the questions. Our research team requires your responses to these questions to determine whether you will be eligible to take part in the study, so by not answering these questions you will not be able to participate. Your responses are kept confidential which means they are not tied to any identifying information. Your responses will be kept in a locked filing cabinet in a locked laboratory at Ryerson University. If it turns out that you are not eligible to take part in the study, your responses will be destroyed in a shredder.

(If okay, Administer Body Shape Questionnaire – 16 Item Version via telephone)

→ *(If yes to email/online administration)*

I require your email address to send you a link to the questionnaire. Can I also have your telephone contact information so that I can contact you when I receive notice of you completing this questionnaire?

(If okay, collect email address and telephone number)

→ *(If participants do not score at least 52 on this questionnaire, indicating no or mild body dissatisfaction)*

I'm sorry to inform you that based on your responses to the questionnaire, you are not eligible to take part in this study at this time. For the purposes of our research study, we are looking for individuals with significant concerns about their bodies, and according to this questionnaire, your level of body dissatisfaction falls within a more normative range. If you'd like, I can recommend a body image workbook that you might still find informative.

→ *(If participants score at least 52 on this questionnaire, indicating at least moderate body dissatisfaction)*

I now have some questions about some symptoms you may be currently experiencing. Please remember that you are not required to answer any of these questions and can discontinue this process at any time by letting me know that you do not wish to continue. Your responses to these questions, like the last ones, will remain confidential unless you tell me certain types of information. Under these next four conditions, I would be ethically or legally required to break confidentiality. These include:

- If you disclose that you are at imminent risk of harming yourself or someone else. In these cases, I could take the necessary steps to ensure your safety and the safety of others. This may include contacting an ambulance, the authorities, and the individual you are intending on hurting if I know their name.
- If you disclose or I have any reason to believe that a child (anyone under the age of 16 years old) is at risk of being abused or neglected, I am legally required to contact the Children's Aid Society.
- If you disclose that a health care professional in Ontario has behaved sexually inappropriately with you as a patient, and I have their name, I will contact their governing college and report the incident.
- If the court subpoenas your records for any reason, I may be required to turn over notes that have been taken or documents you have completed.

(If okay, administer via telephone the Suicidality, Manic Episode, Psychotic Disorders and Mood Disorders with Psychotic Features sections of the Mini International Neuropsychiatric Interview)

→ *(If participant meets criteria for a current psychotic disorder or manic episode)*

I'm sorry to inform you that based on the type of symptoms that you're experiencing, it sounds like this study would not be a good fit for you. We are looking for individuals who experience specific types of body image concerns and it sounds like what you're experiencing is different from that. We have to ask these questions to ensure we are recruiting the most appropriate participants for our study. I encourage you to make an appointment with your family physician if you are experiencing distress or are having a difficult time right now. I really thank you though for your interest in our research and for taking the time to talk with me today. Would I be able to send you information regarding a helpful resource for body image (Dr. Cash's Body Image Workbook)? Do you have any questions for me before I let you go?

→ *(If participant reports clinically significant suicidal ideation/intent/plan on MINI)*

Do you currently have access to your plan? (E.g., Do you have a gun? Are you able to get a gun? Where is/are the gun/ropes/pills? Have you been stockpiling medication?)

If you found these thoughts of dying got more difficult to cope with, what would you do?

Have you made a previous attempt to kill yourself? (*Get details*)

What stops you from trying to kill yourself?

Is there anyone you feel you can call when these thoughts become more frequent or more intense? A family member, friend, teacher, neighbour, therapist?

Would you be willing to come up with a safety plan with me in case these thoughts become more frequent or more intense? For instance, would you be willing to call this support person (if applicable), a crisis hotline, or 911? Would you be able to go to your family physician or nearest Emergency Room?

Would it be okay if I provided you with a list of Crisis Resources in case these thoughts become more frequent or more intense?

→ *(If participant is imminently suicidal)*

Based on your responses, I'm concerned for your safety at this time. From speaking with you over the phone, I'm not sure if you are in a frame of mind where you can keep yourself out of harm's way. Are you able to tell me where you are so that I can provide you with some help? (*Collect address*). Is there anyone there with you right now? Do you remember when I said I was ethically required to tell someone if I thought you were in danger of harming yourself? I'm now going to contact 911 so that they can ensure your safety and offer you support.

→ *(If no exclusion criteria are met)*

It appears as though you are eligible to take part in the study at this time. I will now provide you with more details about the research such that you can decide if it is the right fit for you at this time.

This study is taking place through Ryerson University under the supervision of Dr. Stephanie Cassin. We are conducting a study examining the effectiveness of a various strategies for coping with negative body image. Body dissatisfaction rates are very high across North America, and particularly for people who are overweight or obese. We know that women who are overweight tend to overestimate the size of their bodies, experience greater dissatisfaction with their bodies,

and avoid social situations due to their looks more so than women who are of normal weight. Unfortunately, the existing treatments for body image have been largely tested with normal weight individuals. It really highlights to us that it is important to identify strategies that may be beneficial for individuals who are overweight or obese to help improve body image.

If you are interested in participating in the study, you will be randomly assigned (like the flip of a coin) to receive training in one of three different strategies. Regardless of what group you are assigned to, you will receive one of the strategies. The session will take approximately 60 minutes, and is conducted with a graduate student who is trained in the treatment protocol. The session will focus primarily on the ways in which you feel and think about your body and can be an opportunity for you to discuss any difficulties you might be experiencing with body dissatisfaction. Aside from the possibility of bringing up negative emotions in the session, there are no known risks associated with receiving the training session. The time of the session will be scheduled at your convenience, and will take place at Ryerson University. Do you have any questions so far?

Participation in the study also involves completing questionnaires at a few time points during the study. The questionnaires will ask about things such as your body image, self-compassion, emotional state and other mental health variables. These questionnaires will help us better understand how you think about your body before receiving training in the strategy, and whether or not you experience any changes as a result of receiving the session. All of the questionnaires can be completed from a computer for your convenience.

You will be reimbursed \$15 to attend the training session at Ryerson University to compensate you for your time and help offset the cost of transportation. Furthermore, you will be compensated \$10 for completing all of the questionnaires associated with this study one week later.

Does this sound like something you would be interested in? Of course, your participation in this study is completely voluntary and you may decide not to be in this study, or to be in the study now and then change your mind later. You may leave the study at any time without affecting any future opportunities at Ryerson. You may refuse to answer any questionnaire item you do not want to answer, or not answer a question during the training session by saying “pass”.

(If yes, continue)

Okay, the first step is to have you complete the first questionnaire package that I mentioned before. The packet can be sent to you online if you allow us to contact you via email.

(If okay, collect email address)

The link will prompt you with information about the questionnaires and your participation in the study, similar to what I have gone over with you today. You will need to check off a box indicating you are consenting to participating in this first assessment, but again, you can decide after you complete the questionnaires that you no longer wish to participate. I encourage you to

please complete all questionnaires as honestly as possible so we are able to determine if you experience any changes as a result of learning the strategy.

Thank you for agreeing to participate. If you have any further questions or concerns, please do not hesitate to contact the study team here at Ryerson at 416 979 5000 ex. 3232. Again, my name is _____ . Please feel free to leave a message if no one answers.

Appendix L

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title Managing Negative Thoughts Related to Body Image

Investigators Lauren David, MA
Department of Psychology, Ryerson University
Phone: (416) 979-5000 ext. 3232

Dr. Stephanie Cassin
Department of Psychology, Ryerson University
Phone: (416) 979-5000 ext. 3007

Introduction

You are being asked to take part in a research study. Please read this explanation about the study and its risks and benefits before you decide if you would like to take part. You should take as much time as you need to make your decision. You should ask the study staff to explain anything that you do not understand and make sure that all of your questions have been answered before signing this consent form. Before you make your decision, feel free to talk about this study with anyone you wish. Participation in this study is voluntary.

Background and Purpose

You are being asked to take part in this research study because you have reported having body dissatisfaction and are at a weight that is classified as overweight or obese (Body Mass Index over 25 kg/m²).

The purpose of this study is to determine how women think and feel about their bodies and physical appearance. Body dissatisfaction affects individuals across the weight spectrum; however, previous research finds that individuals who are overweight or obese are particularly vulnerable to feeling badly about their bodies. Body dissatisfaction is associated with a host of negative psychological outcomes, and it is not simply a phase that improves with time or weight loss. In light of the high rates of body dissatisfaction among women and its enduring impact, there is a need to find effective ways to cope with the negative thoughts and emotions associated with body dissatisfaction in individuals who are overweight or obese.

The current study will examine how various thinking strategies affect negative thinking patterns and feelings associated with body dissatisfaction in women who are overweight or obese.

As a participant in the study, you will be randomly assigned to learn one of three thinking strategies. A total of 75 women will participate in this study (25 per group).

Description of the Study

The experiment will involve a training session to learn the thinking strategy you have been assigned to. This training session will take place at the Psychology Research and Training Centre at Ryerson University, located at 105 Bond Street. The total time commitment for this training session will be approximately 1.5 hours. Your participation in this study will last approximately 2 weeks from the time you provided consent to participate in the study.

Baseline Assessment: The study team needs to find out about your functioning before you attend the training session so they can examine the effect of the training. This is called the Baseline Assessment. You will be asked to complete a questionnaire packet that asks questions about your demographic information, general mental health, self-compassion, and body image (including thoughts and feelings you have related to your body). The questionnaire packet should take approximately 30 minutes to complete. This questionnaire packet can be completed from a computer for your convenience.

Strategy Training: You will be randomly assigned into one of three conditions, in which you will be taught: 1) a method to distract yourself from your thoughts, 2) a method to challenge your thoughts, or 3) a method to be kind to yourself when experiencing your thoughts. The strategy you are taught will be decided randomly (by chance, like flipping a coin). To learn this strategy, you will be asked to attend a one-time individual training session at the Psychology Research and Training Centre at Ryerson University. The session will focus primarily on the ways in which you think about your body or physical appearance, and provide education about a coping strategy that may be helpful in managing those thoughts. This session will take place approximately one week after consenting to participate in the research study. Regardless of which group you are assigned to, you will receive a training session. The session will take approximately 60 minutes. The time of the session will be scheduled at your convenience.

Pre- and Post-Training Assessments: You will be asked to complete brief ratings of body image and current emotional state before and after using the strategy. This will allow the study team to determine if you have experienced any changes as a result of receiving the training session.

Follow-up Assessment: You will be asked to continue practicing your assigned strategy on your own on a daily basis for the following week. You will be asked to complete some of the same questionnaires that you completed during the Baseline Assessment one week following the training session. This questionnaire can be completed from a computer for your convenience.

Risks Related to Being in the Study

There is minimal risk involved with attending the session. You will be asked to reflect upon some personal issues and your psychological health (e.g., body image, mood, self-compassion) during the session and while completing the questionnaires. This may cause you some discomfort. You may choose to stop the session or to refuse to answer questions at any time if you experience discomfort.

Benefits to Being in the Study

The strategies may help some people manage negative thoughts about their bodies and physical appearance. However, you may or may not benefit from participating in this study. Information learned from this study may help to improve future treatments for individuals who experience body dissatisfaction.

Voluntary Participation

Your participation in this study is voluntary. You may decide not to be in this study, or to be in the study now and then change your mind later. You may leave the study at any time without affecting your future relations with Ryerson University. You may refuse to answer a question during the training session or any item on the online questionnaires by skipping over it. During the online questionnaire, you may also discontinue your participation at any time by closing your internet browser. By simply closing your browser, no further data will be collected. Information collected up until the point of discontinuation will be collected and analyzed, as this information can help us determine whether there were any specific characteristics of participants who chose to terminate participation in the study that differed from those who completed the study. However, if you wish for the data that has already been collected before you closed the browser to not be used for the purposes of the study, you can simply email the research team at heal@ryerson.ca and request that the data collected not be used. Alternatively, at the end of each online questionnaire, there is a box that you can check if you do not want your data to be collected for the study. By checking that box, none of your responses will be collected or included in the study. During the training session, you may simply tell the experimenter that you wish to discontinue.

Alternatives to Being in the Study

You do not have to join this study to receive the training session. Such strategies are also offered in self-help workbooks and in the community for individuals concerned about their bodies. The study team can discuss any of these options with you.

Confidentiality

If you agree to participate, the study team will ask questions related to your identity and health. The team only collects the information that is necessary for the study. This includes your:

- name,
- age,
- cultural background,
- employment status,
- highest level of education,
- height and weight,
- email address,
- mailing address

The information that is collected for the study will be kept in a locked and secure area by the study team for 10 years. All information collected during this study will be kept confidential and

will not be shared with anyone outside the study unless required by law. You will not be named in any reports, publications, or presentations that may come from this study.

If you decide to leave the study, the information about you that was collected before you left the study will still be used unless you specifically request that it not be used. No new information will be collected without your permission.

In Case You Are Harmed in the Study

While it is not anticipated that participation in the current study will cause you any harm, if you experience feelings of enduring distress as a result of taking part in this study, please contact Dr. Stephanie Cassin at (416) 979-5000 x.3007. She is a Registered Clinical Psychologist and will be able to discuss treatment options available in the community. In no way does signing this consent form waive your legal rights nor does it relieve the investigators, sponsors or involved institutions from their legal and professional responsibilities. You do not give up any of your legal rights by signing this consent form.

Payment Associated with Participating in the Study

You will be reimbursed \$15 for attending the training session to help offset the cost of transportation. This will be provided to you in person immediately following the training session. You will be compensated an additional \$10 for completing all of the questionnaires for this study. This will be provided to you by postage mail or in person (by pick-up) after you complete the final questionnaire one week after the training session visit.

Questions About the Study

If you have any questions, concerns, or would like to speak to the study team for any reason, please call Dr. Stephanie Cassin at (416) 979-5000 x.3007 or the research team at (416) 979-5000 x. 3232.

If you have any questions about your rights as a research participant or have concerns about this study, please contact the Chair of the Ryerson University Research Ethics Board (REB) by email at rebchair@ryerson.ca. The REB is a group of people who oversee the ethical conduct of research studies. These people are not part of the study team. Everything that you discuss will be kept confidential.

Consent

This study has been explained to me and any questions I had have been answered. I know that I may leave the study at any time and that this decision will not affect my relationship with Ryerson University. I agree to take part in this study.

Study Participant's Name (please print)

Signature

Date

(You will be given a signed copy of this consent form)

My signature means that I have explained the study to the participant named above. I have answered all questions.

Person Obtaining Consent (please print)

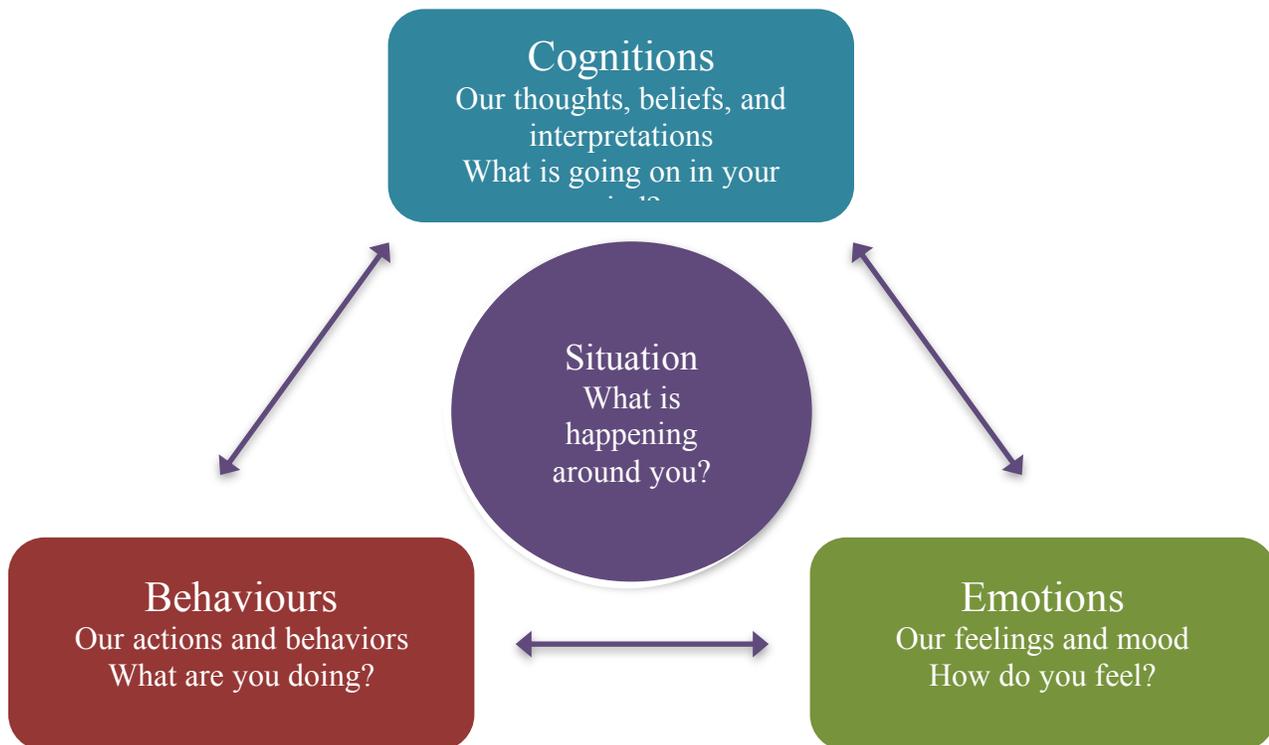
Signature

Date

Appendix M

Cognitive Restructuring Strategy Script and Worksheets

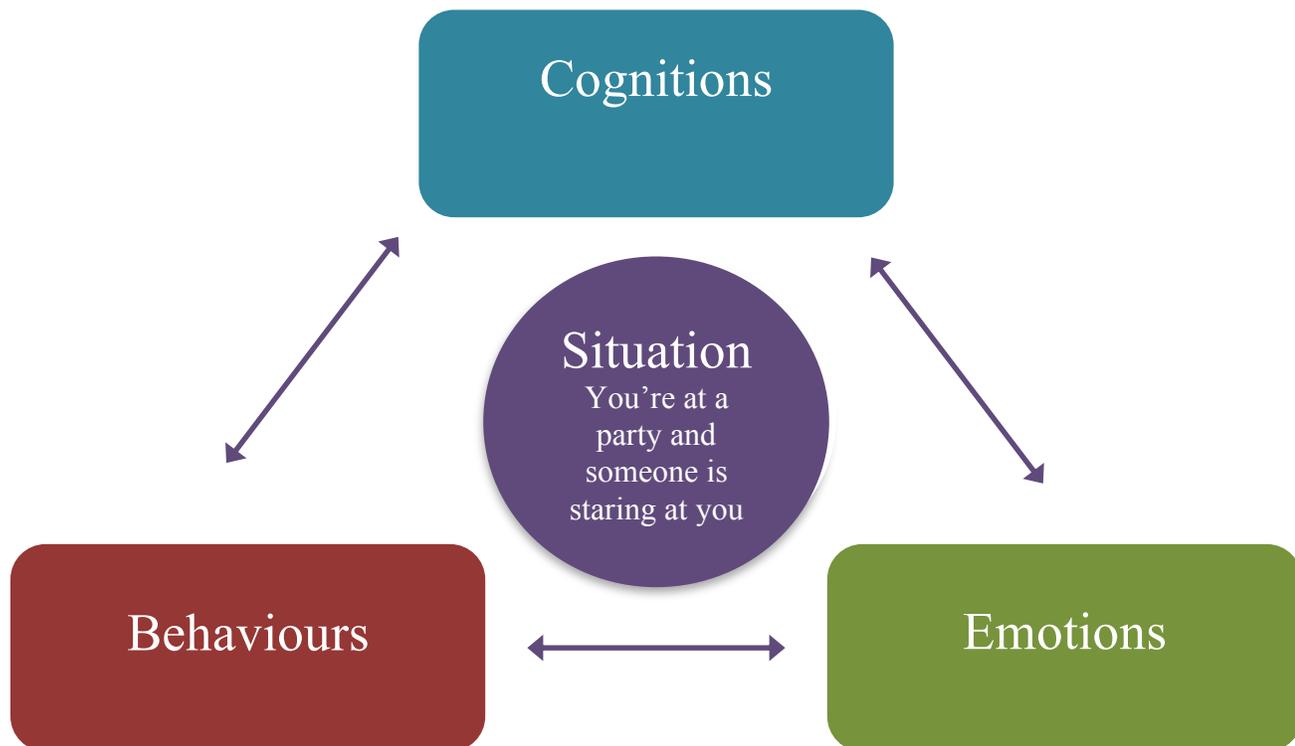
Today I will be teaching you a strategy called cognitive restructuring that can be useful when you find yourself having negative thoughts or emotions about your body. For example, if you find yourself having negative thoughts about just having been weighed, you can try using this strategy.



This strategy is based on the idea that our thoughts, our behaviours, and our emotions are all intricately connected. In particular, the way that we think or interpret situations leads us to feel different emotions and act in different ways. For example, let's say you're talking to someone at a party and there is someone staring at you. What are some different thoughts that you might have in this situation? (Probe if participant doesn't come up with a range of both negative and neutral/positive thoughts: "Can you think of some other possible interpretations that someone might have in this situation?"). Let's say that you interpret the person's looking at you as a sign that he or she thinks you look familiar (or some other neutral thought that the participant has come up with). How might that influence your feelings in the situation? What emotions would you experience? Now let's consider an opposite interpretation. Let's say that you interpret the person's looking at you as a sign that you're unattractive and that your clothes don't look good

(or some other negative thought that the participant has come up with)? How would that make you feel in the situation? (Encourage the participant to write in these into the blank diagram below)

This diagram can help you see that the thoughts that you have about your appearance can influence how you feel act in a given situation.



This really suggests that our ways of thinking are the most influential dictators of negative body image emotions, and they have become so automatic and habitual that you may not even be aware of them as they happen. Specific events may trigger these thoughts, but once they start up, negative emotions follow, which breed more self-critical ruminations and, in turn, greater distress. Then to cope with this distress, you may do things like avoid seeing or feeling your body, or carry out rituals to fix or hide your appearance. These behaviours may help reduce distress in the short-term, but can actually perpetuate negative body image in the long-term

Can you think of a time when you recently felt dissatisfied with your body weight or shape, like trying on jeans, being at the beach, after eating a large meal, being physically intimate? Do you recall what some of your thoughts, assumptions, or predictions were in the situation? If not, what types of thoughts do you typically experience when you feel bad about your body in different situations?

You see how the inner dialogues and conversations about our bodies chatter quite a bit behind closed doors. We call this Private Body Talk. Here is a list of these thoughts that may

accompany body dissatisfaction (show list of examples to individual). Are any of these thoughts that look familiar to you in your own Private Body Talk? Are any of these examples of thoughts that pop into your mind when feeling badly about your physical appearance?

Examples of thoughts associated with body dissatisfaction:

- I never look good
- My life is lousy because of how I look
- My looks make me a nobody
- They (other people) look better than I do
- It's not fair that I look the way I do
- With my looks, nobody is ever going to love me
- I wish I were better looking
- I wish I looked like someone else
- They (other people) won't like me because of how I look
- Something about my looks has to change
- How I look is ruining everything for me
- They (other people) are noticing what's wrong with my looks
- My clothes don't look good on me
- I wish they (other people) wouldn't look at me
- I can't stand my appearance anymore
- They (other people) are judging me because of what I look like
- There's nothing I can do to look good
- I can't do that (something you're invited to or expected to do) because of my looks
- I've got to look just right to do that (something you're invited to or expected to do)

When we are experiencing strong emotions, we are more likely to automatically have these negative thoughts and to view our thoughts as being completely accurate and true. We see our thoughts as facts.

Many of the distressing thoughts you may encounter about your body fall into the category of cognitive distortions. These are mental mistakes or thinking traps that steer your inner conversations along crooked paths that send you in the wrong direction. See the eight errors in your Private Body Talk below.

1) *Beauty-or-Beast*

This distortion occurs when you think about your appearance in extremes. Many people think about their weight in this way: "either I'm at a perfect weight or I'm fat". You gain a few pounds and conclude, "I'm such a blimp".

2) *Unfair-to-Compare*

This distortion involves putting your appearance against unrealistic or extreme standards. When you compare yourself with these standards (from magazines, movies, TV, and the Internet), you make yourself the loser.

3) *The Magnifying Glass*

This distortion is related to what psychologists call selective attention, whereby you focus on a particular aspect of your appearance that you dislike and then exaggerate it – as if you’re putting your body under a magnifying glass.

4) *The Blame Game*

This distortion occurs when you incorrectly conclude that some aspect of one’s appearance is the cause of past difficulties and disappointments in life. The Blame Game usually goes like this: “If I didn’t look so _____, then _____ (something bad) wouldn’t have happened”.

5) *Mind Misreading*

This distortion leads people to reason that, “if I think I look bad, others must think I look bad too”. The truth is people may have entirely different ideas. Psychologists called this mental process projection, because we project our own beliefs into the minds of others.

6) *Misfortune Telling*

This distortion pertains to how your predictions about how your appearance will affect your future. There is the prediction that your physical “flaws” will have short- or long-term negative effects on your life.

7) *Beauty Bound*

This distortion is reflected in thoughts that tell you cannot do certain things because of your appearance. It can imprison you by limiting your activities or aspirations because of your negative body image.

8) *Moody Mirror*

This distortion reflects what psychologists call emotional reasoning – reasoning based solely on how you feel. You start with a strong emotion that you need to justify and end up with a faulty conclusion that justifies and may even strengthen the emotion.

Can you think of any examples of these distortions that come up for you? Which of these distortions are your mind’s favourite or “go-to” ones?

Now we are going to look at ways to challenge or change some of these cognitive distortions.

A way to challenge these distorted patterns of thinking about your body is to first learn to notice your Private Body Talk and identify any cognitive distortions that may arise. Many times, labeling thoughts as biased or distorted alone can be helpful, as it reinforces that the negative beliefs you hold about your appearance are not facts. Instead of assuming that your negative thoughts are true, it is helpful to treat your thoughts as mental events, as guesses or hypotheses. In the same way that a scientist gathers evidence for his or her hypotheses, you can also start to examine the evidence to assess the extent to which your beliefs are true.

Generally, the process of challenging negative thinking about your body involves four steps:

1. Identifying your Private Body Talk
2. Labeling Cognitive Distortions
3. Answering coping questions about your thoughts

4. Allowing a New Inner Voice to talk back

Let's try an example of how to work through the four steps in the context of getting on the scale – a common body image trigger. The Coping Questions Worksheet allows you to ask yourself questions about the validity of your thinking and the Talking Back to My Distortions Worksheet is a tool that can be used to help the process of challenging body image thoughts. This form can be used whenever you experience body dissatisfaction across a variety of situations.

Do you have any questions for me about cognitive restructuring?

Home Practice

Continued practice of these cognitive restructuring strategies through use of these Talking Back Worksheets will make these skills become even stronger and translate more easily into daily life. Do you think you could try using Talking Back to My Cognitive Distortions Worksheet each day this week? How willing are you to try to use these worksheets daily? If you notice a new body image cognitive distortion come up in your daily life, try completing a new worksheet. If ones we have already discussed keep replaying, feel free to simply review one of these existing worksheets that we worked on, and add to it if you can. I've provided some examples here for you to look over and get some ideas if you feel stuck.

Common Examples of Private Body Talk

Examples of thoughts associated with body dissatisfaction:

- I never look good
- My life is lousy because of how I look
- My looks make me a nobody
- They (other people) look better than I do
- It's not fair that I look the way I do
- With my looks, nobody is ever going to love me
- I wish I were better looking
- I wish I looked like someone else
- They (other people) won't like me because of how I look
- Something about my looks has to change
- How I look is ruining everything for me
- They (other people) are noticing what's wrong with my looks
- My clothes don't look good on me
- I wish they (other people) wouldn't look at me
- I can't stand my appearance anymore
- They (other people) are judging me because of what I look like
- There's nothing I can do to look good
- I can't do that (something you're invited to or expected to do) because of my looks
- I've got to look just right to do that (something you're invited to or expected to do)

Body Image Cognitive Distortions

1) *Beauty-or-Beast*

This distortion occurs when you think about your appearance in extremes. Many people think about their weight in this way: “either I’m at a perfect weight or I’m fat”. You gain a few pounds and conclude, “I’m such a blimp”.

2) *Unfair-to-Compare*

This distortion involves putting your appearance against unrealistic or extreme standards. When you compare yourself with these standards (from magazines, movies, TV, and the Internet), you make yourself the loser.

3) *The Magnifying Glass*

This distortion is related to what psychologists call selective attention, whereby you focus on a particular aspect of your appearance that you dislike and then exaggerate it – as if you’re putting your body under a magnifying glass.

4) *The Blame Game*

This distortion occurs when you incorrectly conclude that some aspect of one’s appearance is the cause of past difficulties and disappointments in life. The Blame Game usually goes like this: “If I didn’t look so _____, then _____ (something bad) wouldn’t have happened”.

5) *Mind Misreading*

This distortion leads people to reason that, “if I think I look bad, others must think I look bad too”. The truth is people may have entirely different ideas. Psychologists called this mental process projection, because we project our own beliefs into the minds of others.

6) *Misfortune Telling*

This distortion pertains to how your predictions about how your appearance will affect your future. There is the prediction that your physical “flaws” will have short- or long-term negative effects on your life.

7) *Beauty Bound*

This distortion is reflected in thoughts that tell you cannot do certain things because of your appearance. It can imprison you by limiting your activities or aspirations because of your negative body image.

8) *Moody Mirror*

This distortion reflects what psychologists call emotional reasoning – reasoning based solely on how you feel. You start with a strong emotion that you need to justify and end up with a faulty conclusion that justifies and may even strengthen the emotion.

Coping Questions Worksheet

Use these questions to challenge your automatic thoughts. Be sure to ANSWER each question you ask yourself. Each question may be helpful for many different thoughts.

1. Do I know for certain that _____?

Example: Do I know for certain that others are judging me for my weight?

2. Am I 100% sure that _____?

Example: Am I 100% sure that I will be rejected if I ask him/her out for coffee?

3. What evidence do I have that _____? What evidence do I have that the opposite is true?

Example: What evidence do I have that my partner is not physically attracted to me?

What evidence do I have that my partner IS attracted to me?

4. What is the worst that could happen? How bad is that? How can I cope with that?

5. Do I have a crystal ball?

6. Is there another explanation for _____? Is there another point of view?

Example: Is there another explanation for the group of people laughing as they pass by me?

7. Does _____ have to lead or equal _____?

Example: Does "feeling fat" have to lead or equal to "I am fat?" Do jeans not fitting have to lead or equal to "I'm a whale"

8. What does _____ mean? Does _____ really mean that _____?

Example: What does being "disgusting" mean? Does the fact that I feel badly about my body really mean that I am disgusting?

Talking Back to My Distortions Worksheet

→ Body Image Cognitive Distortion:

→ A typical activating event or situation for this distortion is:

→ My Private Body Talk often tells me:

-
-
-
-
-
-

→ Using my coping questions, my New Inner Voice talks back to my distortion and says:

-
-
-
-

Talking Back to My Distortions Worksheet – Example A

→ Body Image Cognitive Distortion:

Moody Mirror

→ A typical activating event or situation for this distortion is:

Getting dressed in the morning

→ My Private Body Talk often tells me:

- *These jeans look terrible, they make your stomach look hideous*
- *I feel so fat*
- *No one will take me seriously at the work meeting looking like this*

→ Using my coping questions, my New Inner Voice talks back to my distortion and says

- *I have a big meeting at work today, and there are lots of other things that were bothering me before I started worrying about my body*
- *Just because I feel fat doesn't mean I am fat.*
- *My appearance may not be the real issue here. I need to accept that today is making me stressed and I'm going to leave my looks out of it.*
- *I'm not feeling attractive right now. This isn't a good time to contemplate my looks. I'm just making myself feel worse. So I'm going to stop this!*

Talking Back to My Distortions Worksheet – Example B

→ Body Image Cognitive Distortion:

Mind Misreading

→ A typical activating event or situation for this distortion is:

Going to the gym and working out in front of others

→ My Private Body Talk often tells me:

- *I look too fat to go to the gym (also Beauty Bound!)*
- *People at the gym will stare at me*
- *If I think I don't belong in the gym, imagine what the regulars will think of me! They will give me two weeks tops*

→ Using my coping questions, my New Inner Voice talks back to my distortion and says

- *Why can't I go? There isn't a sign saying "Heavy People Not Admitted" It's my own discomfort stopping me.*
- *Lots of my overweight friends go the gym. Instead of "I can't do it", can I ask myself "What would make it easier to do?"*
- *When I think about what may happen, I'm worrying about the future. But my future hasn't occurred yet, I don't have a crystal ball.*
- *When I have been at the gym in the past, no one looked at me strangely or treated me differently.*
- *I'm fairly bright, but I can't read minds. The only mind I'm reading here is my own. People at the gym have never given me any evidence to suggest that they think I shouldn't be there or should leave.*

Talking Back to My Distortions Worksheet – Example C

→ Body Image Cognitive Distortion:

Beauty or Beast

→ A typical activating event or situation for this distortion is:

Getting on the scale

→ My Private Body Talk often tells me:

- *I'm so far away from my goal weight*
- *This always happens, nothing is working to make me lose weight*
- *I have zero self-control, I'm such a failure*
- *I will never reach my goals, I will be fat and disgusting forever (also Misfortune Telling!)*

→ Using my coping questions, my New Inner Voice talks back to my distortion and says

- *Okay, so I'm not totally perfect, but I'm not totally imperfect either. I have features that enhance my appearance, like my eyes.*
- *I notice a lot of extreme words here ("forever", "never", "zero"). It's not true that I'm a total failure and lack all self-control if I don't reach some arbitrary number on the scale*
- *Do I judge others with only two extreme categories? Why do I view myself so unfairly compared to others?*
- *What evidence do I have, other than my own harsh judgments, that I'm so unattractive? I received a compliment yesterday on my new haircut.*

Talking Back to My Distortions Worksheet – Example D

→ Body Image Cognitive Distortion:

The Blame Game

→ A typical activating event or situation for this distortion is:

Hearing about other people's relationships

→ My Private Body Talk often tells me:

- *I haven't been on a date in years*
- *All my relationships end because they aren't physically attracted to me*
- *I asked someone out a year ago and they said no. It was obviously because of my size*
- *No one finds me attractive (also Mind Misreading!)*
- *Why bother even trying to meet someone when it's totally pointless because of how I look*
- *I'll be alone forever (also Misfortune Telling!)*

→ Using my coping questions, my New Inner Voice talks back to my distortion and says

- *Stop blaming! Here I go again, blaming my looks for ruining everything. I'm going to leave my weight out of this and focus on what I can do to make things better*
- *I'm probably blaming my looks because I do like them. That doesn't mean my looks are actually causing bad things to happen.*
- *They didn't tell me my looks weren't good enough. I made that up myself. I don't have much real evidence to support those negative thoughts.*

Talking Back to My Distortions Worksheet – Example E

→ Body Image Cognitive Distortion:

Unfair to Compare

→ A typical activating event or situation for this distortion is:

Watching my favourite television show

→ My Private Body Talk often tells me:

- *Look how perfect she is, I will never compare*
- *I should be doing anything to lose weight, this is what society values*
- *If I could only look like that I would have no problems*

→ Using my coping questions, my New Inner Voice talks back to my distortion and says

- *Is it really fair to be comparing myself to the star of this show, who is paid to look this good? Who am I more attractive than?*
- *I will not buy into societal ideals of attractiveness, as I refuse to treat myself that way.*
- *The way she looks has nothing to do with how I look. That person doesn't make me look badly, she doesn't make me do anything*
- *I'm going to take time now to think about something else about me that compares favorably with others, like my sense of humour and kindness*

Appendix N

Self-Compassion Strategy Script and Worksheets

Today I will be teaching you a strategy called self-compassion that can be useful when you find yourself having negative thoughts or emotions about your body. For example, if you find yourself having negative thoughts about just having been weighed, you can try using this strategy.

When I say compassion, what does it mean to you? What does the experience of compassion feel like?

(Reflect on and discuss participants' response)

There are a number of key ingredients that make up compassion. First, to have compassion for others, you must notice that others are suffering. If you ignore that homeless person on the street, you can't feel compassion for their experience. Second, compassion involves feeling moved by others' suffering. When this occurs, you feel a sense of genuine caring and the desire to help the person in some way. Finally, compassion is very different from pity, as it means that you realize that suffering, failure, and imperfection are all part of the shared human experience. It is what connects all of us, rather than sets us apart from others.

Having compassion for oneself is really no different than having compassion for others. What is your usual way of responding to yourself when things become difficult? For instance, what is going through your mind when things do not go the way you want them to, or when you make mistakes or fall short of your ideals? (Discussion may touch on ignoring pain, "dealing with it", judging or criticize)

Absolutely! Our default is to run, fight, and hide from difficult experiences and emotions. However, self-compassion means you are kind and understanding to yourself when confronted with personal failures. Things will not always go the way you want them to and this is a reality shared by all of us. The more you open your heart to this reality instead of fighting against it, the more you are open to feeling compassion for yourself.

Would you be willing to try an experiment with me? Take a moment to think about times when a close friend of yours feels really bad about him or herself or is really struggling in some way. How would you respond to your friend in this situation (especially when you're at your best)? What do you typically do? Say? What tone of voice do you typically talk to your friend? How do you feel towards them and their suffering?

Now think about times when you feel bad about yourself or are struggling. How do you typically respond to yourself in these situations?

Did you notice a difference? If so, why do you think that is? What factors or fears come into play that lead you to treat yourself and others so differently? What do you make of that?

We often find that it is much easier to be compassionate towards others than with ourselves. We are biologically programmed as the social creatures we are to be on the lookout for others' suffering, to feel some of that burden, and to comfort them with a genuine kindness. Why might this be helpful for us to do?

However, self-compassion, where we direct this kindness towards ourselves, appears to be much more difficult to do! As you found with our experiment, the things we say to ourselves during times of difficulty are much more critical than the things we say to others under similar circumstances. We can call this voice our "Inner Critic", and it can become particularly negative and loud when it comes to our bodies.

Can you think of a time when you recently felt dissatisfied with your body weight or shape, like trying on jeans, being at the beach, after eating a large meal, being physically intimate? Do you recall what some of the things the Inner Critic told you when you were in the situation? Here is a list of thoughts that may accompany body dissatisfaction that may help you (show list of examples to individual). Do any of these thoughts that look familiar to you?

Examples of thoughts associated with body dissatisfaction:

- I never look good
- My life is lousy because of how I look
- My looks make me a nobody
- They (other people) look better than I do
- It's not fair that I look the way I do
- With my looks, nobody is ever going to love me
- I wish I were better looking
- I wish I looked like someone else
- They (other people) won't like me because of how I look
- Something about my looks has to change
- How I look is ruining everything for me
- They (other people) are noticing what's wrong with my looks
- My clothes don't look good on me
- I wish they (other people) wouldn't look at me
- I can't stand my appearance anymore
- They (other people) are judging me because of what I look like
- There's nothing I can do to look good
- I can't do that (something you're invited to or expected to do) because of my looks
- I've got to look just right to do that (something you're invited to or expected to do)

Please add any things you typically say to yourself when you feel bad about your body in different situations? (Have participant write these down). The Inner Critic voice triggers body dissatisfaction. We can use self-compassion to buffer our response to these voices.

Soothing Touch

One easy way to ease the critical voices when you're feeling badly is to use a soothing touch. This involves touching your body in a gentle way, such as giving yourself a hug or placing your hand on your heart. It may feel awkward or embarrassing at first, but your body doesn't know that. It just responds to the physical gesture of warmth and care. Our skin is an incredibly sensitive organ and research finds that physical touch releases a hormone called oxytocin, provides a sense of security, soothes distressing emotions, and calms cardiovascular stress.

Let's try a brief exercise using a few options of the soothing touches while doing some deep breathing. The purpose of this is to feel free to explore where on your body a gentle touch is actually soothing. I'm going to do it with you as well. Don't worry about doing it perfectly or "correctly", just do your best and let it feel calming.

- I'll ask you to sit up straight, in a posture that makes you feel dignified but also comfortable
- Take 2 to 3 deep, satisfying breaths, releasing any tension from the day
- Allow your breath to go back to normal, as your body knows how to breathe itself
- Feel the gentle pressure and the warmth of your hand
- If you wish, you can make small circles with your hand
- Feel the natural rising and falling of your chest as you breathe in and out
- Now let's try crossing your arms, like you're giving yourself a hug
- Gently stroking your arms, and maybe giving yourself a gentle squeeze
- Now let's try holding your hands together in your lap
- Feel free to gently rub your hands together while they are clasped together, or to squeeze them softly
- Take another 3 deep breaths, and on the third we will slowly come back and open our eyes

What was that experience like for you? Which one feels the most soothing to you, if any?

Exploring self-compassion through writing

Everybody has something about their bodies or appearance that they don't like. When thinking about what that is for you, what comes to mind?

I'm going to ask you to write about how your Inner Critic responds when you think about this aspect of your body. On this piece of paper, can you write what emotions come up for you when you think about this aspect of yourself? Try to just feel your emotions exactly as they are – no more, no less – and then write about them. What words do you actually use when you're self-critical about that feature of your body? Are there key phrases that come up over and over again? What is the tone of your voice? Does the voice remind you of any one in your past who was critical of you?

(After they finish writing)

What was your experience writing these down?

It may be very difficult to write our innermost thoughts and emotions down, and yet these are the things we say to ourselves on a daily basis. Many people also experience these feelings of shame,

insecurity, or not being “good enough” (use the participants’ words and experiences). It is the human condition to be imperfect, and feelings of failure and inadequacy are part of the experience of life.

Now think about an imaginary friend who is unconditionally loving, accepting, and kind. Imagine that this friend can see all your strengths and all your weaknesses, including the aspect of your body you have just been writing about. Reflect upon what this friend feels towards you, and how you are loved and accepted exactly as you are, with all your very imperfections. This friend recognizes the limits of human nature, and is forgiving towards you. This friend understands your life history and the millions of things that have happened in your life to create you as you are in this moment. Your particular “flaw” is connected to so many things you didn’t necessarily choose: your genes, your family history, and life circumstances.

We are going to take up to 15 minutes to write a letter to yourself from the perspective of this friend – focusing on the perceived flaw you tend to judge yourself for.

I want you to consider what would this friend say to you about your “flaw” from the perspective of unlimited compassion.

- How would this friend convey the deep compassion he/she feels for you, especially for the pain you feel when you judge yourself so harshly?
- What would this friend write in order to remind you that you are only human, that all people have both strengths and weaknesses?
- And if you think this friend would suggest possible changes you should make, you can include those as well. Just be sure to focus on how these suggestions embody feelings of unconditional compassion.

Here is a sheet with some instructions and reminders in case you forget while writing (hand participant *Letter Writing Instructions and Reminders* sheet) and a template paper where you can write your letter (hand participant the *Letter to Myself from An Unconditionally Loving Friend* worksheet)

Part Three: Changing your Critical Self-Talk

Now that you’ve written the letter, you can become curious about your self-critical voice. The first step towards changing the way to treat yourself is to notice when you are being self-critical. It may be that – like many of us — your self-critical voice is so common for you that you don’t even notice when it is present. Is that the case for you? Whenever you’re feeling bad about something, think about what you’ve just said to yourself.

When you catch those self-critical thoughts, ask yourself whether your Inner Critic has some sort of purpose or goal? Is there a chance that the Inner Critic actually wants to help you and has your best interests for health and happiness?

And how effective or helpful is the Inner Critic at accomplishing this goal or in making you happier or healthier?

It sounds like there is the possibility that this critical voice may be trying to be helpful, but is actually making things worse. What can we do with this new awareness?

Can you make an effort to reframe the observations made by your inner critic in a friendly, positive way? What might you say? If you're having trouble thinking of what words to use, think about what your friend said to you in the letter.

(An example to offer if they can't come up with anything "I know you are feeling upset right now because of your weight, especially after having to get on the scale. I thought that by being critical, you would feel motivated to make healthier choices. But you feel even worse and are not feeling good in your body. I want you to be happy, so why don't you take a few deep breaths and remember all the reasons you're a great person?")

While engaging in this supportive self-talk, you might want to try your soothing touch. Some of them are subtle enough that others might not even notice.

I'll ask you to read your letter start to finish now that you've had some time away from it, really letting the words sink in. Allow the compassion to pour into you, comforting you like a cool breeze on a hot day.

Home Practice

Practicing the three components of self-compassion with a daily self-compassion journal will help to organize your thoughts and to express emotions. If you keep a journal regularly, your self-compassion practice will become even stronger and translate more easily into daily life.

At some point during the evening when you have a few quiet moments, review the day's events. In your journal, write down anything about your appearance you felt bad about, anything you judged your body or appearance for, or any difficult experience with your body image that caused you pain. For each event, try to use self-compassion to process the event in a more self-compassionate way using mindfulness, common humanity, and self-kindness.

Do you think you could complete this journal daily for the next week?

Common Examples of the Inner Critic Voices Associated with Body Dissatisfaction

Examples of thoughts associated with body dissatisfaction:

- I never look good
- My life is lousy because of how I look
- My looks make me a nobody
- They (other people) look better than I do
- It's not fair that I look the way I do
- With my looks, nobody is ever going to love me
- I wish I were better looking
- I wish I looked like someone else
- They (other people) won't like me because of how I look
- Something about my looks has to change
- How I look is ruining everything for me
- They (other people) are noticing what's wrong with my looks
- My clothes don't look good on me
- I wish they (other people) wouldn't look at me
- I can't stand my appearance anymore
- They (other people) are judging me because of what I look like
- There's nothing I can do to look good
- I can't do that (something you're invited to or expected to do) because of my looks
- I've got to look just right to do that (something you're invited to or expected to do)

Letter Writing Exercise Instructions and Reminders

Think about an imaginary friend who is unconditionally loving, accepting, and kind. Imagine that this friend can see all your strengths and all your weaknesses, including the aspects of your body you dislike. Reflect upon what this friend feels towards you, and how you are loved and accepted exactly as you are, with all your very imperfections. This friend recognizes the limits of human nature, and is forgiving towards you. This friend understands your life history and the millions of things that have happened in your life to create you as you are in this moment. Your particular “flaw” is connected to so many things you didn’t necessarily choose: your genes, your family history, and life circumstances.

- How would this friend convey the deep compassion he/she feels for you, especially for the pain you feel when you judge yourself so harshly?
- What would this friend write in order to remind you that you are only human, that all people have both strengths and weaknesses?
- Would this friend would suggest possible changes you should make? How do these suggestions embody feelings of unconditional compassion?

Letter to Myself From An Unconditionally Loving Friend

Dear _____,

Sincerely,

My Self-Compassion Diary

Date:

What is the Inner Critic saying about your body today? What about my body has led me to feel badly? Did I encounter a difficult experience with my body image today that caused me pain? How am I critically judging my body or appearance today?

Is there a way I can process these events, critical voices, and emotions in a more self-compassionate way using mindfulness, common humanity, and self-kindness? If this is difficult, I can return to the letter I wrote to myself from the perspective of an unconditionally loving, accepting friend.

- *Mindfulness*: Can I bring a non-judgmental awareness to the painful emotions I experienced? What are these emotions?
- *Common Humanity*: How is my experience connected to the larger human experience? Can I acknowledge that being human means being imperfect, and that all people have these sorts of painful experiences?
- *Self-Kindness*: Can I write myself some words of comfort? Can I let myself know that I care about myself and adopt a gentle tone with myself? Can I do something that might help make me feel better?

My Self-Compassion Diary

Date: *Monday, August 10, 2016*

What is the Inner Critic saying about your body today? What about my body has led me to feel badly? Did I encounter a difficult experience with my body image today that caused me pain? How am I critically judging my body or appearance today?

My co-worker returned from maternity leave. She had already lost most of her baby weight. My Inner Critic was in my head all day saying:

- *You're a blimp*
- *Here we go again with the cookies, where's your self-control*
- *Everyone else has more willpower than you do, it's no wonder you don't look like them*
- *If she can lose weight after having a baby, and you can't, it must mean that you're extra lazy*

Is there a way I can process these events, critical voices, and emotions in a more self-compassionate way using mindfulness, common humanity, and self-kindness? If this is difficult, I can return to the letter I wrote to myself from the perspective of an unconditionally loving, accepting friend.

- *Mindfulness: Can I bring a non-judgmental awareness to the painful emotions I experienced? What are these emotions?*
- *Common Humanity: How is my experience connected to the larger human experience? Can I acknowledge that being human means being imperfect, and that all people have these sorts of painful experiences?*
- *Self-Kindness: Can I write myself some words of comfort? Can I let myself know that I care about myself and adopt a gentle tone with myself? Can I do something that might help make me feel better?*
- *There is shame, guilt and loathing. I blame myself for how I look, and attributed past disappointments to being overweight*
- *Everyone feels badly about their bodies sometimes, and I am no exception. This is part of life - to compare oneself to others. I know my Inner Critic is just trying to help, but it's making me feel worse about myself.*
- *I'm sad to see myself suffer like this. I want me to be happy. I'll take a few deep breaths and remind myself of the positive qualities I possess, rather than focusing on my disliked body features.*

My Self-Compassion Diary

Date: *Saturday, June 27, 2017*

What is the Inner Critic saying about your body today? What about my body has led me to feel badly? Did I encounter a difficult experience with my body image today that caused me pain? How am I critically judging my body or appearance today?

Today I was at a BBQ with my friends. Everyone was in their bathing suits and going swimming. The whole day I caught my Inner Critic saying harsh things:

- *You're too big to be in a bathing suit*
- *Everyone will judge you - even if they don't say it, they will be thinking it*
- *Best to just stay covered up so no one will be offended or embarrassed for you*

Is there a way I can process these events, critical voices, and emotions in a more self-compassionate way using mindfulness, common humanity, and self-kindness? If this is difficult, I can return to the letter I wrote to myself from the perspective of an unconditionally loving, accepting friend.

- *Mindfulness: Can I bring a non-judgmental awareness to the painful emotions I experienced? What are these emotions?*
- *Common Humanity: How is my experience connected to the larger human experience? Can I acknowledge that being human means being imperfect, and that all people have these sorts of painful experiences?*
- *Self-Kindness: Can I write myself some words of comfort? Can I let myself know that I care about myself and adopt a gentle tone with myself? Can I do something that might help make me feel better?*
- *There is sadness and frustration. This really sucks!*
- *Everyone feels judged at some point. I am not the only one here that has felt insecurity about their body.*
- *I bet if I told my friends how I felt, they would tell me about all the times they felt the same way! I'm not alone in this, and this experience of suffering makes me human.*
- *I want me to lead a happy life without my body image dictating what I can and cannot do.*
- *It's okay if it's too hard for me to be in a swimsuit today. I'm going to remind myself of all the reasons my friends at this BBQ love me!*

Appendix O

Control Condition Training Script and Worksheets

Today I will be teaching you a strategy that can be useful when you find yourself having negative thoughts or emotions about your body. For example, if you find yourself having negative thoughts about just having been weighed, you can try using this strategy.

Can you think of a time when you recently felt dissatisfied with your body weight or shape, like trying on jeans, being at the beach, after eating a large meal, being physically intimate? Do you recall what some of the thoughts that ran through your mind when you were in the situation? Here is a list of thoughts that may accompany body dissatisfaction that may help you (provide participant with *Common Examples of Thoughts Associated with Body Dissatisfaction Sheet*). Do any of these thoughts that look familiar to you?

Examples of thoughts associated with body dissatisfaction:

- I never look good
- My life is lousy because of how I look
- My looks make me a nobody
- They (other people) look better than I do
- It's not fair that I look the way I do
- With my looks, nobody is ever going to love me
- I wish I were better looking
- I wish I looked like someone else
- They (other people) won't like me because of how I look
- Something about my looks has to change
- How I look is ruining everything for me
- They (other people) are noticing what's wrong with my looks
- My clothes don't look good on me
- I wish they (other people) wouldn't look at me
- I can't stand my appearance anymore
- They (other people) are judging me because of what I look like
- There's nothing I can do to look good
- I can't do that (something you're invited to or expected to do) because of my looks
- I've got to look just right to do that (something you're invited to or expected to do)

Please add any things you typically say to yourself when you feel bad about your body in different situations? (Have participant write these down). So it appears as though there are a number of negative thoughts that come up for you when you're feeling badly about your body.

One strategy that may be helpful in response to these thoughts is to take a relaxing break and to do a neutral writing task. The writing task is designed to be a bit boring, as to not bring on any strong emotions. We will ask you to write out, in full sentences, your typical weekday. This can include activities you always do, and things you may do depending on the type of day you're

having. We are not sure whether this type of task will help, worsen, or not affect body dissatisfaction. How does that sound?

(Address participants' questions or concerns)

We know that this may type of writing activity may cause an annoying hand cramp or become very repetitive, so we have allotted a large amount of time for you to complete it. We will leave you for 30 minutes, so feel free to take frequent breaks. When you are finished, simply take the rest of the time to have a break. I will come and alert you when the 30 minutes is up.

Do you have to go to the bathroom before we begin?

(Leave them in separate room without any electronics or other distractions for 30 minutes)

After the 30 minutes...

How was that experience for you?

(Discuss what the participant mentions in a brief, reflective manner)

Common Examples of Thoughts Associated with Body Dissatisfaction Take Home Worksheet)

- I never look good
- My life is lousy because of how I look
- My looks make me a nobody
- They (other people) look better than I do
- It's not fair that I look the way I do
- With my looks, nobody is ever going to love me
- I wish I were better looking
- I wish I looked like someone else
- They (other people) won't like me because of how I look
- Something about my looks has to change
- How I look is ruining everything for me
- They (other people) are noticing what's wrong with my looks
- My clothes don't look good on me
- I wish they (other people) wouldn't look at me
- I can't stand my appearance anymore
- They (other people) are judging me because of what I look like
- There's nothing I can do to look good
- I can't do that (something you're invited to or expected to do) because of my looks
- I've got to look just right to do that (something you're invited to or expected to do)

References

- Adami, G., Campostano, A., Ravera, G., Leggieri, M., & Scopinaro, N. (2001). Body image and body weight in obese patients. *Behavioral Medicine*, *27*, 121-126.
- Albertson, E.R., Neff, K.D., & Dill-Shackleford, K.E. (2015). Self-compassion and body dissatisfaction in women: A randomized controlled trial of a brief meditation intervention. *Mindfulness*, *6*, 444-454.
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*, 217-237.
- Alleva, J.M., Sheeran, P., Webb, T.L., Martijn, C., & Miles, E. (2015). A meta-analytic review of stand-alone interventions to improve body image. *PLoS ONE*, *10*, 1-33.
- American Psychological Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th Ed.). Washington, DC: Author.
- Anderson, J.W., Konz, E.C., Frederich, R.C., & Wood, C.L. (2001). Long-term weight loss maintenance: A meta-analysis of US studies. *The American Journal of Clinical Nutrition*, *74*, 579-584.
- Annis, N.M., Cash, T.F., & Hrabosky, J.I. (2004). Body image and psychosocial differences among stable average weight, currently overweight, and formerly overweight women: The role of stigmatizing experiences. *Body Image*, *1*, 155-167.
- Antoniou, E.E., Bongers, P., & Jansen, A. (2017). The mediating role of dichotomous thinking and emotional eating in the relationship between depression and BMI. *Eating Behaviours*, *26*, 55-60.

- Arch, J.J., & Craske, M.G. (2006). Mechanisms of mindfulness: Emotion regulation following a focused breathing induction. *Behaviour Research and Therapy*, *44*, 1849-1858.
- Bagby, R.M., Rector, N.A., Segal, Z.V., Joffe, R.T., Levitt, A.J., Kennedy, S.H., & Levitan, R.D. (1999). Rumination and distraction in major depression: Assessing response to pharmacological treatment. *Journal of Affective Disorders*, *55*, 225-229.
- Barnard, L.K., & Curry, J.F. (2011). Self-compassion: Conceptualizations, correlates, and interventions. *Review of General Psychology*, *13*, 289-303.
- Beautmont, E., Galpin, A., & Jenkins, P (2012). ‘Being kinder to myself’: A prospective comparative study, exploring post-trauma therapy outcome measures, for two groups of clients, receiving either Cognitive Behaviour Therapy or Cognitive Behaviour Therapy and Compassionate Mind Training. *Counselling Psychology Review*, *27*, 31-43.
- Beck, J.S. (2011). *Cognitive Behavior Therapy: Basics and Beyond (2nd Edition)*. New York, NY: Guilford Press.
- Bennett-Levy, J., Richards, D.A., & Farrand, P. Low intensity CBT interventions: A revolution in mental health care. In J. Bennett-Levy, D. Richards, P. Farrand, H. Christensen, K. Griffiths, D. Kavanagh,... & Williams, C. (Eds.) *Oxford Guide to Low Intensity CBT Interventions* (pp. 3-19). Oxford, UK: Oxford University Press.
- Berkman, E.T., & Lieberman, M.D. (2013). Using neuroscience to broaden emotion regulation: Theoretical and methodological considerations. *Social and Personality Psychology Compass*, *3*, 475-493.
- Bonanno, G.A. (2001). Emotion self-regulation. In T. J. Mayne, & G. A. Bonanno (Eds.), *Emotions: Current Issues and Future Directions* (pp. 251–285). New York, NY: Guilford Press.

- Bonanno, G.A., Papa, A., Lalande, K., Westphal, M., & Coifman, K. (2004). The importance of being flexible: The ability to both enhance and suppress emotion expression predicts long-term adjustment. *Psychological Science, 15*, 482–487.
- Braun, T.D., Park, C.L., & Gorin, A. (2016). Self-compassion, body image, and disordered eating: A review of the literature. *Body Image, 17*, 117-131.
- Bray, G. (2004). Medical consequences of obesity. *The Journal of Clinical Endocrinology and Metabolism, 89*, 2583–2589.
- Breines, J. G., & Chen, S. (2012). Self-compassion increases self-improvement motivation. *Personality and Social Psychology Bulletin, 38*, 1133–1143.
- Breines, J., Toole, A., Tu, C., & Chen, S. (2014). Self-compassion, body image, and self-reported disordered eating. *Self and Identity, 13*, 432–448.
- Brochu, P.M., & Esses, V.M. (2011). What’s in a name? The effects of the labels “Fat” versus “Overweight” on Weight Bias. *Journal of Applied Social Psychology, 8*, 1981-2008.
- Bucchianeri, M.M., Arikian, A.J., Hannan, P.J., Eisenberg, M.E., & Neumark Sztainer, D. (2013). Body dissatisfaction from adolescence to young adulthood: Findings from a 10-year longitudinal study. *Body Image, 10*, 1-7.
- Butters, J.W., & Cash, T.F. (1987). Cognitive-behavioral treatment of women’s body-image dissatisfaction. *Journal of Consulting and Clinical Psychology, 55*, 889-897.
- Byely, L., Archibald, A.B., Graber, J. & Brooks-Gunn, J. (2000). A prospective study of familial and social influences on girls’ body image and dieting. *International Journal of Eating Disorders, 28*, 155-164.
- Cash, T.F. (1994). Body image and weight changes in a multisite comprehensive very-

- low-calorie diet program. *Behavior Therapy*, 25, 239-254.
- Cash, T.F. (2004). Body image: past, present, and future. *Body Image*, 1, 1-5.
- Cash, T.C. (2008). *The Body Image Workbook: An Eight-Step Program for Learning to Like your Looks*. Oakland, CA: New Harbinger Publications.
- Cash, T. F., Counts, B., & Huffine, C. E. (1990). Current and vestigial effects of overweight among women: Fear of fat, attitudinal body image, and eating behaviors. *Journal of Psychopathology and Behavioral Assessment*, 12, 157– 167.
- Cash, T. F., & Hrabosky, J. I. (2003). The effects of psychoeducation and self-monitoring in a cognitive-behavioral program for body-image improvement. *Eating Disorders*, 11, 255–270.
- Cash, T. F., & Hrabosky, J. I. (2004). Treatment of body image disturbances. In J. K. Thompson (Ed.), *Handbook of Eating Disorders and Obesity* (pp. 515–541). Hoboken, NJ: John Wiley & Sons Inc.
- Cash, T.F., Melnyk, S.E., & Hrabosky, J.I. (2004). The assessment of body image investment: An extension revision of the appearance schemas inventory. *International Journal of Eating Disorders*, 35, 305-316.
- Cash, T. F., Muth, J., Williams, P., & Rieves, L. (1996, November). New assessments of body image: Measuring cognitive and behavioral components. Paper presented at the Association for the Advancement of Behavior Therapy. New York.
- Cash, T.F., Santos, M.T., & Williams, E.F. (2005). Coping with body-image threats and challenges: Validation of the Body Image Coping Strategies Inventory. *Journal of Psychosomatic Research*, 58, 191-199.
- Cash, T.C., & Smolak, L. (2012). *Body Image: A Handbook of Science, Practice, and*

- Prevention (2nd ed.)*. New York, NY: Guildford Press.
- Cash, T.F., & Strachan, M.D. (2002). Cognitive-behavioral approaches to changing body image. In T.F. Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 478–486). New York, NY: Guilford Press.
- Cattarin, J. A., & Thompson, J. K. (1994). A 3-year longitudinal study of body image, eating disturbance, and general psychological functioning in adolescent females. *Eating Disorders, 2*, 114–125.
- Cattarin, J. A., & Thompson, J. K., Thomas, C., & Williams, R. (2000). Body image, mood, and televised images of attractiveness: The role of social comparison. *Journal of Social and Clinical Psychology, 19*, 220-239
- Christian, J.G., Tsai, A.G., & Bessesen, D.H. (2010) Interpreting weight losses from lifestyle modification trials: Using categorical data. *International Journal of Obesity, 34*, 207-220.
- Colls, R. & Evans, B. (2010). Challenging assumptions: Re-thinking “the obesity problem”. *Geography, 95*, 99–105.
- Colquitt J., Clegg, A., Loveman, E., Royle, P., & Sidhu, M.K. (2005). Surgery for morbid obesity. *Cochrane Database Systematic Review, CD003641*.
- Cook, J.E., Purdie-Vaughns, V., Meyer, I.H., & Busch, J.T.A. (2014). Intervening within and across levels: A multilevel approach to stigma and public health. *Social Science and Medicine, 103*, 101-109.
- Cooper, C. (2010). Fat studies: mapping the field. *Sociology Compass, 4*, 1020–1034.
- Cooper, P.J., Taylor, M.J., Cooper, Z., Fairburn, C.G. (1987). The development and

- validation of the body shape questionnaire. *International Journal of Eating Disorders*, 6, 485-494.
- Crocker, J., & Park, L.E. (2004). The costly pursuit of self-esteem. *Psychological Bulletin*, 130, 392-414.
- Dalebroux, A., Goldstein, T. R., & Winner, E. (2008). Short-term mood repair through art-making: Attention redeployment is more effective than venting. *Motivation and Emotion*, 32, 288 -295.
- Daye, C.A., Webb, J.B., & Jafari, N. (2014). Exploring self-compassion as a refuse against recalling the body-related shaming of caregiver eating messages on dimensions of objectified consciousness in college women. *Body Image*, 11, 547-556.
- Demarest, J., & Allen, R. (2000). Body image: Gender, ethnic, and age differences. *The Journal of Social Psychology*, 140, 465-472.
- Diedrich, A., Grant, M., Hofmann, S.G., Hiller, W., & Berking, M. (2014). Self-compassion as an emotion regulation strategy in major depression disorder. *Behaviour Research and Therapy*, 58, 43-51.
- Dittmar, H. (2009). How do “Body Perfect” ideals in the media have a negative impact on body image and behaviors? Factors and processes related to self and identity. *Journal of Social and Clinical Psychology*, 28, 1-8.
- Dion, K.K., Berscheidt, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, 24, 285-290.
- Dixon, J.B., Dixon, M.E., & O’Brien, P.E. (2002). Body image: Appearance orientation and evaluation in the severely obese: Changes with weight loss. *Obesity Surgery*, 12, 65-71.

- Drake, J.E., & Winner, E. (2012). Confronting sadness through art-making: Distraction is more beneficial than venting. *Psychology of Aesthetics, Creativity, and the Arts*, 6, 255-261.
- Dove, E.R., Byrne, S.M., & Bruce, N.W. (2009). Effect of dichotomous thinking on the association of depression with BMI and weight change among obese females. *Behaviour Research and Therapy*, 47, 529-534.
- Dumitrescu, A.L., Dogaru, C.R., Duta, C., Zetu, L., & Zetu, I. (2014). The inter-relationships between body dissatisfaction, body image disturbance, and oral health. *Procedia – Social and Behavioral Sciences*, 127, 368-371.
- Dworkin, S. H., & Kerr, B. A. (1987). Comparison of interventions for women experiencing body image problems. *Journal of Counseling Psychology*, 34, 136–140.
- Eldredge, K.L., & Agras, W.S. (1996). Weight and shape overconcern and emotional eating in binge eating disorder. *International Journal of Eating Disorders*, 19, 73-82.
- Etu, S.F., & Gray, J.J. (2010). A preliminary investigation of the relationship between induced rumination and state body image dissatisfaction and anxiety. *Body Image*, 7, 82-85.
- Evans, C. & Dolan, B. (1993). Body Shape Questionnaire: Derivation of shortened “alternate forms”. *International Journal of Eating Disorders*, 13, 315-321.
- Fairburn, C.G. (2008). *Cognitive Behaviour Therapy and Eating Disorders*. New York, NY: Guilford Press.
- Farrell, C., Shafran, R., & Lee, M. (2006). Empirically evaluated treatments for body image disturbance: A review. *European Eating Disorders Review*, 14, 289-300.
- Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2013). Self-compassion in the face of

- shame and body image dissatisfaction: Implications for eating disorders. *Eating Behaviors*, *14*, 207-210.
- Field, A.E., Camargo, C.A., Taylor, C.B., Berkey, C.S., Roberts, S.B., & Colditz, G.A. (2001). Peer, parent, and media influences on the development of weight concerns and frequent dieting among preadolescent and adolescent girls and boys. *Pediatrics*, *107*, 54-60.
- Fiske, L., Fallon, E. A., Blissmer, B., & Redding, C.A. (2014). Prevalence of body dissatisfaction among United States adults: Review and recommendations for future research. *Eating Behaviors*, *15*, 357-365.
- Fitzsimons, G.M., & Bargh, J.A. (2004). Automatic self-regulation. In R.F. Baumeister & K.D. Vohs (Eds.) *Handbook of Self-Regulation: Research, Theory, and Applications* (pp. 151-170). New York, NY: Guildford Press.
- Fredrickson, B.L., Roberts, T.A., Noll, S.M., Quinn, D.M., & Twenge, J.M. (1998). That swimsuit becomes you: Sex differences in self-objectification, restrained eating, and math performance. *Journal of Personality and Social Psychology*, *75*, 269-284.
- French, L.R.M., Thomas, L., Campbell, J., Kuyken, W., Lewis, G., Williams, C.,... Turner, K.M. (2017). Individuals' long-term use of cognitive-behavioural skills to manage their depression: A qualitative study. *Behavioural and Cognitive Psychotherapy*, *45*, 46-57.
- Friedman, M., & Brownell, K. (1995). Psychological correlates of obesity: Moving to the next research generation. *Psychological Bulletin*, *117*, 3-20.
- Friedman, K.E., Reichmann, S.K., Costanzo, P.R., & Musante, G.J. (2002). Body image

- partially mediates the relationship between obesity and psychological distress. *Obesity Research, 10*, 33-41.
- Friis, A.M., Johnson, M.H., & Consedine, N.S. (2017). Paradoxical effects of self-compassion on mood and teeth flossing behavior in an experimental setting. *Mindfulness, 8*, 150-158.
- Fontaine, K.R. & Barofsky, I. (2001). Obesity and health-related quality of life. *Obesity Reviews, 2*, 173-182.
- Foster, G.D., Wadden, T.A., & Vogt R.A. (1997). Body image in women before, during, and after weight loss treatment. *Health Psychology, 16*, 226-229.
- Foster, G.D., Wadden, T.A., Kendall, P.C., Stunkard, A.J., & Vogt, R.A. (1996). Psychological effects of weight loss and regain: A prospective evaluation. *Journal of Consulting and Clinical Psychology, 64*, 752-757.
- Gale, C., Gilbert, P., Read, N., & Goss, K. (2012). An evaluation of the impact of introducing compassion focused therapy to a standard treatment programme for people with eating disorders. *Clinical Psychology & Psychotherapy, 21*, 1-12.
- Garner, D. M., Garfinkel, P. E., Stancer, H. C., & Moldofsky, H. (1976). Body image disturbance in anorexia nervosa and obesity. *Psychosomatic Medicine, 38*, 327–336.
- Garner, D. M., Olmsted, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*, 15–34.
- Germer, C.K., & Neff, K.D. (2013). Self-compassion in clinical practice. *Journal of Clinical Psychology, 69*, 1-12.
- Gilbert, P., Baldwin, M.W., Irons, C., Baccus, J.R., & Palmer, M. (2006). Self-criticism

- and self-warmth: An imagery study exploring their relation to depression. *Journal of Cognitive Psychotherapy: An International Quarterly*, 20, 183-200.
- Gilbert, P., & Irons, C. (2004). A pilot exploration of the use of compassionate images in a group of self-critical people. *Memory*, 12, 507-516.
- Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2010). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research, and Practice*, 84, 239-255.
- Grabe, S., Ward, L.M., Hyde, J.S. (2008). The role of the media in body image concerns: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134, 460-476.
- Grant, J.R., & Cash, T.F. (1995). Cognitive-behavioral body image therapy: Comparative efficacy of group and modest-contact treatments. *Behavior Therapy*, 26, 69-84.
- Grilo, C.M., Masheb, R.M., Brody, M., Burke-Martindale, C.H., & Rothschild, B.S. (2005). Binge eating and self-esteem predict body image dissatisfaction among men and women seeking bariatric surgery. *International Journal of Eating Disorders*, 37, 347-351.
- Groesz, L.M. Levine, M.P., & Murnen, S.K. (2002). Thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, 31, 1-16.
- Gross, J.J. (1998). Antecedent- and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, 74, 224-237.
- Gross, J.J. (2008) Emotion regulation. In M. Lewis, J.M. Haviland, L. Feldman-Barett (Eds) *Handbook of Emotions* (pp. 497-512). New York, NY: Guildford Press.
- Gyurak, A., Gross, J.J., & Etkin, A. (2011). Explicit and Implicit Emotion Regulation: A

- Dual-Process Framework. *Cognition and Emotion*, 25, 400-412.
- Harter, S. (1999). *The Construction of the Self: A Developmental Perspective*. New York, NY: Guilford Press.
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model processes and outcomes. *Behaviour Research and Therapy*, 44, 1-25.
- Health Canada. (2003). *Canadian Guidelines for Body Weight Classification in Adults*. Retrieved from: http://www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/cg_bwc_introduction-eng.php
- Heatherton, T. F. & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology*, 60, 895-910.
- Heinberg, L.J., Haythornthwaite, J.A., Rosofsky, W., McCarron, P., & Clarke, A. (2000). Body image and weight loss compliance in elderly African-American hypertensives. *American Journal of Health Behavior*, 24, 163-173.
- Heinberg, L.J., & Thompson, J.K. (1995). Body image and televised images of thinness and attractiveness: A controlled laboratory investigation. *Journal of Social and Clinical Psychology*, 14, 325-328.
- Heinberg, L.J., Thompson, J.K., & Matzon, J.L. (2001). Body image dissatisfaction as a motivator for healthy lifestyle change: Is some distress beneficial? In R. H. Striegel-Moore & L. Smolak (Eds.), *Eating Disorders: Innovative Directions in Research and Practice* (pp. 215-232). Washington, DC: American Psychological Association Press
- Heinberg, L.J., Thompson, J.K., & Matzon, J.L. (2001). Body image dissatisfaction as a

- motivator for healthy lifestyle change: Is some distress beneficial? In R.H. Striegel-Moore & L. Smolak (Eds.), *Eating Disorders: Innovative Directions in Research and Practice*. Washington, DC: American Psychological Association.
- Heuer, C. A., McClure, K. J., & Puhl, R. M. (2011). Obesity stigma in online news: A visual content analysis. *Journal of Health Communication, 16*, 976-987.
- Higgins, E.T., Bond, R.N., Klein, R., & Strauman, T. (1986). Self-discrepancies and emotional vulnerability: How magnitude, accessibility, and type of discrepancy influence affect. *Journal of Personality and Social Psychology, 51*, 5-15.
- Hill, A. J., & Williams, J. (1998). Psychological health in a non-clinical sample of obese women. *International Journal of Obesity, 22*, 578–583.
- Hofmann, S.G., Sawyer, A.T., & Fang, A. (2010). The empirical status of the “New Wave” of CBT. *Psychiatric Clinical of North America, 33*, 701-710.
- Holmqvist, K., & Frisen, A. (2009). Body dissatisfaction across cultures: Findings and research problems. *European Eating Disorders Review, 18*, 133- 146.
- Jakatdar, T.A., Cash, T.F., & Engle, E.K. (2006). Body-image thought processes: The development and initial validation of the Assessment of Body-Image Cognitive Distortions. *Body Image, 3*, 325-333.
- James, W. (1890). *Principles of Psychology*. Chicago, IL: Encyclopedia Britannica.
- Jarry, J.L., & Ip, K. (2005). The effectiveness of stand-alone cognitive-behavioural therapy for body image: A meta-analysis. *Body Image, 2*, 317-331.
- Johnson, E.R., Affuso, O., Levitan, E.B., Carson, T.L., & Baskin, M.L. (2017). Body image and dissatisfaction among rural Deep South African American women in a weight loss intervention. *Journal of Health Psychology, Epub ahead of print*.

- Kelly, A.C., & Carter, J.C. (2015). Self-compassion training for binge eating disorder: A pilot randomized controlled trial. *Psychology and Psychotherapy: Theory, Research and Practice*, 88, 285-303.
- Kelly, A.C., & Stephen, E. (2016). A daily diary study of self-compassion, body image, and eating behaviour in female college students. *Body Image*, 17, 152-160.
- Kilbourne, J. (1994). Still killing us softly: advertising and the obsession with thinness. In P. Fallon, M. A. Katzman, & S. C. Wooley (Eds.) *Feminist Perspectives on Eating Disorders* (pp. 395–437). New York, NY: Guilford.
- Kobylynska, D., & Karwowska, D. (2015). How automatic activation of emotion regulation influences experiencing negative emotions. *Frontiers in Psychology*, 6, 1628.
- Koff, E., & Sangani, P. (1997). Effects of coping style and negative body image on eating disturbance. *International Journal of Eating Disorders*, 22, 51-56.
- Kuhl, M.H., & McPartland, T.S. (1954). An empirical investigation of self-attitudes. *American Sociological Review*, 19, 68-76.
- Latner, J. D., & Wilson, R. E. (2011). Obesity and body image in adulthood. In T. F. Cash & L. Smolak (Eds.), *Body Image: A Handbook of Science, Practice, and Prevention* (pp. 189-197). New York: Guilford Press.
- Lavelee, D.M., & Cash, T.F. (1997). Cognitive-behavioral body image therapy: Extended evidence of the efficacy of a self-directed program. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 15, 281-294.
- Leary, M.R., Tate, E.B., Adams, C.E., Allen, A.B., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology*, 92, 887-904.

- Leibel, R.L. (2009). Molecular physiology of weight regulation in mice and humans. *International Journal of Obesity*, 32, S98-S108.
- Levin, M.E., Hildebrandt, M.J., & Hayes, S.C. (2012). The impact of treatment components suggested by the psychological flexibility model: A meta-analysis of laboratory-based component studies. *Behavior Therapy*, 43, 741-756.
- Linehan, M.M. (2014). *DBT Skills Training Manual* (2nd Edition). New York, NY: Guilford Press.
- Lovibond, P.F., & Lovibond, S.H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33, 335-343.
- Lukaski, H.C. (2014). Commentary: Body mass index persist as a sensible beginning to comprehensive risk assessment. *International Journal of Epidemiology*, 43, 669-671.
- Lyons, K., Meisner, B.A., Sockalingam, S., & Cassin, S.E. (2014). Body image after bariatric surgery: A qualitative study. *Bariatric Surgical Practice and Patient Care*, 9, 41-49.
- MacBeth, A. & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review*, 32, 545-553.
- Malkin, A. R., Wornian, K., & Chrisler, J. C. (1999). Women and weight: gendered messages on magazine covers. *Sex Roles*, 40, 647-656.
- Martin, K.A. & Lichtenberger, C.M. (2002). Fitness enhancement and changes in body image. In: Cash, T.F. & Pruzink, T. (eds.). *Body Image: A handbook of Theory, Research, and Clinical Practice*. New York, NY: Guilford Press.

- Matz, P. E., Foster, G. D., Faith, M. S., & Wadden, T. A. (2002). Correlates of body image dissatisfaction among overweight women seeking weight loss. *Journal of Consulting and Clinical Psychology, 70*, 1040–1044.
- McClure, K.J., Puhl, R.M., & Heuer, C.A. (2010). Obesity in the news: Do photographic images of obese persons influence anti-fat attitudes? *Journal of Health Communications, 4*, 359-371.
- McGannon, K. R., & Spence, J. C. (2012). Exploring news media representations of women's exercise and subjectivity through critical discourse analysis. *Qualitative Research in Sport, Exercise and Health, 4*, 32-50.
- McKinley, N.M., & Shibley, J. (1996). The Objectified Body Consciousness Scale: Development and Validation. *Psychology of Women Quarterly, 20*, 181-215.
- McVey, G.L., Davis, R., Tweed, S., & Shaw, B. F. (2004). Evaluation of a school-based program designed to improve body image satisfaction, global self-esteem, and eating attitudes and behaviors: A replication study. *International Journal of Eating Disorders, 36*, 1–11.
- Mercurio, A., & Rima, B. (2011). Watching my weight: Self-weighing, body surveillance, and body dissatisfaction. *Sex Roles, 65*, 47-55.
- Mignogna, J., Hundt, N.E., Kauth, M.R., Kunik, M.E., Sorocco, K.H., Naik, A.D., ... & Cully, J.A. (2014). Implementing brief cognitive behavioral therapy in primary care: A pilot study. *Translational Behavioural Medicine, 4*, 175-183.
- Mosewich, A.D., Kowalski, K.C., Sabiston, C.M., Sedgwick, W.A., & Tracy, J.L. (2011). Self-compassion: A potential resource for young women athletes. *Journal of Sport and Exercise Psychology, 33*, 103-123.

- Morrison, T.G., Kalin, R., & Morrison, M.A. (2004). Body image evaluation and body image investment among adolescents: A test of sociocultural and social comparison theories. *Adolescence, 39*, 571-592.
- Morrison, T. G., Morrison, M. A., & Hopkins, C. (2003). Striving for bodily perfection: An explanation for the drive for masculinity in Canadian males. *Psychology of Men and Masculinity, 4*, 111-120.
- Myers, T.A., & Crowther, J.H. (2009). Social comparison as a predictor of body dissatisfaction: A meta-analytic review. *Journal of Abnormal Psychology, 118*, 683-698.
- Myers, A., & Rosen, J.C. (1999). Obesity stigmatization and coping: Relation to mental health symptoms, body image, and self-esteem. *International Journal of Metabolic Disorders, 23*, 221-230.
- National Institute for Clinical Excellence (NICE) NICE Clinical Guidelines. London: National Institute for Clinical Excellence; 2004. Eating Disorders – Core interventions in the treatment and management of anorexia, bulimia nervosa, related eating disorders.
- National Institute for Clinical Excellence (NICE) NICE Clinical Guidelines. London: National Institute for Clinical Excellence; 2014. Obesity: Identification, assessment, and management.
- National Institute for Clinical Excellence (NICE) NICE Clinical Guidelines. London: National Institute for Clinical Excellence; 2015. Preventing excess weight gain.
- Neff, K. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*, 85-101.
- Neff, K.D. (2003b). Development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250.

- Neff, K.D. & Germer, C.K. (2012). A pilot study and randomized controlled trial of the Mindful Self-Compassion Program. *Journal of Clinical Psychology, 00*, 1-17.
- Neff, K.D., Hsieh, Y., & Dejitterat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity, 4*, 263-287.
- Neff, K.D., Kirkpatrick, K.L., & Ruse, S.S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41*, 139-154.
- Neff, K.D. & Pommier, E. (2012). The relationship between self-compassion and other-focused concern among college undergraduates, community adults, and practicing meditators. *Self and Identity, iFirst article*, 1-17.
- Neff, K. D., & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of relating to oneself. *Journal of Personality, 77*, 23–50.
- Neumark-Sztainer, D.R., Friend, S.E., Flattum, C.F., Hannan, P.J., Story, M.T., Bauer, K.W., ..., Petrich, C.A. (2010). New moves – preventing weight-related problems in adolescent girls a group-randomized study. *American Journal of Preventative Medicine, 39*, 421-432.
- Neumark-Sztainer, D., Paxton, S.J., Hannan, P.J., Haines, J. and Story, M. (2006). Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviours in adolescent females and males. *Journal of Adolescent Health, 39*, 244-251.
- Noble, M.L. (2012). *The Effect of Mainstream Media on Body Image and Stress Reactivity in Latina Females*. Pitzer Senior Theses. Paper 23
http://scholarship.claremont.edu/pitzer_theses/23
- Nolen-Hoeksema, S., Girgus, J. S., & Seligman, M. E. P. (1992). Predictors and

- consequences of childhood depressive symptoms: A 5-year longitudinal study. *Journal of Abnormal Psychology, 101*, 405–422
- Nolen-Hoeksema, S., Stice, E., Wade, E., & Cohon, C. (2007). Reciprocal relations between rumination and bulimic, substance abuse, and depressive symptoms in female adolescents. *Journal of Abnormal Psychology, 116*, 198–207.
- Nutter, S. Russell-Mayhew, S., Alberga, A.S., Arthur, N., Kassan, A., Lund, D.E... Williams, E. (2016). Positioning of weight bias: Moving towards social justice. *Journal of Obesity, 2016*, 1-10
- Obesity Society, The (Aug, 2013). People first language in obesity [Position statement].
- Odom, J., Zalesin, K.C., Washington, T.L., Miller, W.W., Hakmeh, B., Zaremba, D.L., ...McCullough, P.A. (2010). Behavioral predictors of weight regain after bariatric surgery. *Obesity Surgery, 20*, 349-356.
- Ogden, J., & Evans, C. (1996). The problem with weighing: Effects on mood, self-esteem, and body image. *International Journal of Obesity and Related Metabolic Disorders, 20*, 3, 272-277.
- Olmstead, M.P., & McFarlane, T. (2004). Body weight and body image. *BMC Women's Health, S5 (Epub)*.
- Pennebaker, J.W., & Beall, S.K. (1986). Confronting a traumatic event: Toward an understanding of inhibition and disease. *Journal of Abnormal Psychology, 95*, 274–281.
- Penney, T.L., & Kirk, S.F.L. (2015). The Health at Every Size paradigm and obesity: Missing empirical evidence may help push the reframing obesity debate forward. *American Journal of Public Health, 105*, e38-e42.
- Puhl, R., & Brownell, K. D. (2001). Bias, discrimination, and obesity. *Obesity Research,*

- 9, 788–805.
- Puhl, R., & Brownell, K. D. (2006). Confronting and coping with weight stigma: An investigation of overweight and obese adults. *Obesity, 14*, 1802-1815.
- 9, 788–805.
- Puhl, R.M., Henderson, K.E., & Brownell, K.D. (2005). Social consequences of obesity . In Kopelman, P., Caterson, I., & Dietz, W. (Eds.), *Clinical Obesity and Related Metabolic Disease in Adults and Children* (pp. 29-45). Oxford, UK: Blackwell Publishing Ltd.
- Puhl, R.M., & Heuer, C.A. (2009). The stigma of obesity: A review and update. *Obesity, 5*, 941-964.
- Przedziecki, A., Sherman, K. A., Gaillie, A., Taylor, A., Foley, E., & Stalgis-Bilinski, K. (2012). My changed body: Breast cancer, body image, distress and self-compassion. *Psycho-Oncology, 22*, 1872-1879.
- Ramirez, E. M., & Rosen, J. C. (2001). A comparison of weight control and weight control plus body image therapy for obese men and women. *Journal of Consulting and Clinical Psychology, 69*, 440–446.
- Richards, D.A. (2010). Behavioural activation. In J. Bennett-Levy, D. Richards, P. Farrand, H. Christensen, K. Griffiths, D. Kavanagh,... & Williams, C. (Eds.) *Oxford Guide to Low Intensity CBT Interventions* (pp. 141-151). Oxford, ENG: Oxford University Press.
- Robison, J. (2005). Health at Every Size: Toward a new paradigm of weight and health. *Medscape General Medicine, 7*, 13.
- Rodin, J., Silberstein, L., & Striegel-Moore, R. (1984). Women and weight: A normative

- discontent. *Nebraska Symposium on Motivation*, 32, 267-307.
- Rogge, M., Greenwald, M., & Golden, A. (2004). Obesity, stigma and civilized oppression. *Advances in Nursing Science*, 27, 301–315.
- Rosen, J.C. (1996). Body image assessment and treatment in controlled studies of eating disorders. *International Journal of Eating Disorders*, 20, 331-343.
- Rosen, J. C., Orosan, P., & Reiter, J. (1995). Cognitive behavior therapy for negative body image in obese women. *Behavior Therapy*, 26, 25–42.
- Rosen, J.C., Saltzberg, E., & Srebnik, D. (1989). Cognitive behavior therapy for negative body image. *Behavior Therapy*, 20, 393-404.
- Rosen, J.C., Srebnik, D., Saltzberg, E., & Wendt, S. (1990). Development of a body image avoidance questionnaire. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3, 32-37.
- Rosenberger, P.H., Henderson, K. E., & Grilo, C.M. (2006). Correlates of body image dissatisfaction in extremely obese female bariatric surgery candidates. *Obesity Surgery*, 16, 1331-1336.
- Russell-Mayhew, S., & Grace, A. (2016). A call for social justice and best practices for the integrated prevention of eating disorders and obesity. *Eating Disorders*, 24, 54-62.
- Sandoz, E.K., Wilson, K.G., Merwin, R.M., Kellum, K.K. (2013). Assessment of body image flexibility: The Body-Image Acceptance and Action Questionnaire. *Journal of Contextual Behavioral Science*, 2, 39-48.
- Sarwer, D., & Thompson, K.J. (2002). Obesity and body image disturbance. In T.A. Wadden & A.J. Stunkard (Eds.) *Handbook of Obesity Treatment* (pp. 447-464). New York, NY: The Guildford Press.

- Sarwer, D. B., Wadden, T. A., & Foster, G. D. (1998). Assessment of body image dissatisfaction in obese women: Specificity, severity, and clinical significance. *Journal of Consulting and Clinical Psychology, 66*, 651–654.
- Schilder, P.F. (1935). *The Image and Appearance of the Human Body*. England: Truber & Company Ltd.
- Schwartz, M.B., & Brownell, K.D. (2004). Obesity and body image. *Body Image, 1*, 43-56.
- Shapiro, S.L., Carlson, L.E., Astin, J.A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*, 373-386.
- Sheehan, D.V., Lecrubier, Y., Sheehan, K.H., Arorim, P., Janavs, J., Willer, E., Hergueta, T., et al., (1998). The Mini-International Neuropsychiatric Interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychology, 59*, 22-23.
- Shikatani, B., Antony, M.M., Kuo, J., & Cassin, S.E. (2014). The impact of cognitive restructuring and mindfulness strategies on postevent processing and affect in social anxiety disorder. *Journal of Anxiety Disorders, 28*, 570-579.
- Sheppes, G., & Meiran, N. (2007). Better late than never? On the dynamics of online regulation of sadness using distraction and cognitive reappraisal. *Personality and Social Psychology Bulletin, 33*, 1518-1532.
- Sheppes, G., Scheibe, S., Suri, G., & Gross, J. J. (2011). Emotion regulation choice. *Psychological Science, 22*, 1391-1396.
- Sonneville, K.R., Calzo, J.P., Harton, N.J., Haines, J., Austin, S.B., & Field, A.E. (2013).

- Body satisfaction, weight gain, and binge eating among overweight adolescent girls. *International Journal of Obesity*, 7, 944-949.
- Statistics Canada (2014) *Overweight and Obese Adults (Self-Reported)*. Retrieved from: <http://www.statcan.gc.ca/pub/82-625-x/2015001/article/14185-eng.htm>.
- Spitzer, R.L., Yanovski, S., Wadden, T., Wing, R., Marcus, M.D., Stunkaerd, A.,...
Horne, R.L. (1993). Binge eating disorder: Its further validation in a multisite study. *International Journal of Eating Disorders*, 13, 137-153.
- Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin*, 128, 825-48.
- Stice, E. & Shaw, H.E. (2012). Role of body dissatisfaction in the onset and maintenance of eating pathology: A synthesis of research findings. *Journal of Psychosomatic Research*, 53, 985-93.
- Strachan, M.D., & Cash, T.F. (2002). Self-help for a negative body image: A comparison between components of a cognitive-behavioral program. *Behavior Therapy*, 33, 235-251.
- Stunkard, A., & Mendelson, M. (1967). Obesity and the body image. Characteristics of disturbances in the body image of some obese persons. *American Journal of Psychiatry*, 123, 1296-1300.
- Swami, V., Frederick, D.A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., et al. (2010). The attractive female body weight and female body dissatisfaction across 26 countries across 10 world regions: Results of the International Body Project I. *Personality and Social Psychology Bulletin*, 36, 309-325.
- Swann, W.B. (1996). *Self-Traps: The Elusive Quest for Higher Self-Esteem*. New York, NY: Westview Press.

- Szymanski, M.L., & Cash, T.F. (1995). Body-image disturbances and self-discrepancy theory: Expansion of the Body-Image Ideals Questionnaire. *Journal of Social and Clinical Psychology* 14, 134-146.
- Tantleff-Dunn, Barnes, R.D., & Larose, J.G. (2011). It's not just a "women thing:" The current state of normative discontent. *Eating Disorders*, 19, 392-402.
- Taylor, V.H., McIntyre, R.S., Remington, G., Levitan, R.D., Stonehocker, B., & Sharma, A. (2012). Beyond pharmacotherapy: Understanding the links between obesity and chronic mental illness. *Canadian Journal of Psychiatry*, 57, 5-12.
- Telch, C.F., & Stice, E. (1998). Psychiatric comorbidity in women with binge eating disorder: Prevalence rates from a non-treatment-seeking sample. *Journal of Consulting and Clinical Psychology*, 66, 768-776.
- Thompson, T.J. (1999). *Exacting Beauty: Theory, Assessment, and Treatment of Body Image Disturbance*. Washington, D.C.: American Psychological Association.
- Thompson, J.K., & Stice, E. (2001). Thin-deal internalization: Mounting evidence for a new risk factor for body image disturbance and eating pathology. *Current Directions in Psychological Science*, 10, 181-183
- Thorndike, E.L. (1920). A constant error in psychological ratings. *Journal of Applied Psychology*, 4, 25-29.
- Tiggemann, M. (2004). Body image across the adult life span: stability and change. *Body Image*, 1, 29-41.
- Titov, N., Andrews, G. & McEvory, P (2010). Using low intensity interventions in the

- treatment of anxiety disorders. In J. Bennett-Levy, D. Richards, P. Farrand, H. Christensen, K. Griffiths, D. Kavanagh, ... Williams, C. (Eds.) *Oxford Guide to Low Intensity CBT Interventions* (pp. 169-177). Oxford, ENG: Oxford University Press.
- Tomiyama, A.J. (2014). Weight stigma is stressful: A review of evidence for the cyclic obesity/weight stigma model. *Appetite*, 82, 8-15.
- Twells, L.K., Gregory, D.M., Reddigan, J., & Midodzi, W.K. (2014). Current and predicted prevalence of obesity in Canada: A trend analysis. *Canadian Medical Association Journal*, 2, E18-E26.
- Tylka, T.L., & Kroon Van Diest, A.M. (2015). Protective factors. In L. Smolak & M. P. Levine (Eds.), *The Wiley Handbook of Eating Disorders* (pp. 430–444). West Sussex, UK: John Wiley & Sons, Ltd.
- Van den Berg, P., Netmark-Sztainer, D. (2007). Fat 'n happy 5 years later: Is it bad for overweight girls to like their bodies? *Journal of Adolescent Health*, 41, 415-417.
- Vartanian, L.R. (2012). Self-Discrepancy Theory and body image. In the *Encyclopedia of Body Image and Human Appearance*, 2, 711-717.
- Verplanken, B., & Velsvik, R. (2008). Habitual negative body image thinking as a psychological risk factor in adolescents. *Body Image*, 5, 133–140.
- Vincent, N., & Holmqvist, M. (2010). In J. Bennett-Levy, D. Richards, P. Farrand, H. Christensen, K. Griffiths, D. Kavanagh, ... Williams, C. (Eds.) *Oxford Guide to Low Intensity CBT Interventions* (pp. 187-197). Oxford, ENG: Oxford University Press.
- Wadden, T.A., Foster, G.D., & Letizia, K.A. (1994). One-year behavioral treatment of obesity: comparison of moderate and severe caloric restriction and the effects of weight maintenance. *Journal of Consulting and Clinical Psychology*, 62, 165-171.

- Waller, G. & Mountford, V.A. (2015). Weighing patients within cognitive-behavioural therapy for eating disorders: How, when, and why. *Behaviour Research and Therapy*, 70, 1-10.
- Wasylikiw, L., MacKinnon, A.L., MacLellan, A.M. (2012). Exploring the link between self-compassion and body image in university women. *Body Image*, 9, 236-245.
- Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scale. *Journal of Personality and Social Psychology*, 54, 1063-1070.
- Wegner, D.M., Schneider, D.J., Carter, S.R., & White, T.L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, 53, 5-13.
- Wilson, T.G. (1996). Acceptance and change in the treatment of eating disorders and obesity. *Behavior Therapy*, 27, 417-439.
- Wing, R.R. (2002). Behavioral weight control. In: Wadden, T.A., & Stunkard, A.J., (Eds.). *Handbook of Obesity Treatment* (pp. 301–316). New York, NY: The Guildford Press.
- Wolgast, M., Lundh, L.G., & Viborg, G. (2011). Cognitive reappraisal and acceptance: An experimental comparison of two emotion regulation strategies. *Behavioral Research and Therapy*, 49, 858-866.
- Yanovski, S. Z., Nelson, J. E., Dubbert, B. K., & Spitzer, R. L. (1993). Association of binge eating disorder and psychiatric comorbidity in obese subjects. *American Journal of Psychiatry*, 150, 1472–1479.
- Zheng, Y., Burke, L.E., Danford, C.A., Ewing, L.J., Terry, M.A., Sereika, S.M. (2016).

Patterns of self-weighing behavior and weight change in a weight loss trial. *International Journal of Obesity*, 40, 1392-1396.

Glossary of Abbreviations

ACT	Acceptance and Commitment Therapy
AN	Anorexia Nervosa
APA	American Psychiatric Association
BDD	Body Dysmorphic Disorder
BED	Binge Eating Disorder
BMI	Body Mass Index
BN	Bulimia Nervosa
CBT	Cognitive Behavioural Therapy
CR	Cognitive Restructuring
DBT	Dialectical Behaviour Therapy
HAES	Health at Every Size
MSC	Mindful Self-Compassion
NICE	National Institute for Health and Care Excellence
RST	Response Style Theory
SC	Self-Compassion
VAS	Visual Analogue Scale